

INDEX

This index covers all technical papers and committee reports (exclusive of standards) published by the Society during 1963. References to articles in the monthly publication *Materials Research & Standards* are designated in this index as *MR&S* with month of issue and page number given. A more comprehensive index to *Materials Research & Standards* for 1963 appears in the December issue, page 1027. References to papers published as Special Technical Publications are designated in this index by the *STP* number only.

A

Abdun-Nur, E. A. (discussion), *MR&S*, April, 277.
Absorption spectroscopy. Report of Committee E-13, 488.
Accelerated testing of concrete cylinders (Smith and Chojnacki), 1079.
Acids. Report of Committee E-15, 491.
Acoustical materials. Report of Committee C-20, 307.
Activated carbon. Report of Committee D-28, 442.
Adamson, A. W.: Structure of solid surfaces, *STP 340*.
Adhesion test
bonded concrete surfaces (Wakeman, Stover, and Galloway), *MR&S*, April, 299.
concrete (Wittenwyler), 1037.
shear test for adhesive bonds (Lunsford), *STP 345*.
Adhesives
past, present, and future (Blomquist, Marburg Lecture), *issued as a separate publication*.
Report of Committee D-14, 393.
surface texture in relation to bonding (Marian), *STP 340*.
Admixtures. Report of Committee C-9, 270.
Adsorption of gases and vapors on solids (Brunauer and Copeland), *STP 340*.
Aerodynamic heating, aluminum sandwich panel fatigue test (Buntin and Love), *STP 338*.
Age-hardened alloys, fatigue properties of (Wolff and Dodd), *MR&S*, Sept., 734.
Aggregates
alkali-carbonate rock reactivity (Gillott), 1195
effects of grading on properties of masonry mortar (Bloem), *STP 320*.
Report of Committee C-9, 270.
Report of Committee D-4, 348.
Ahearn, R. L.: Quality control of high-temper-

ature solid rocket control components, *STP 350*.
Air displacement, porosity measurements, (Fleming, Boland, and Harris), *MR&S*, Jan., 20; (discussion), Aug., 643.
Airborne contamination
comparison of dust count data (Marsh), *STP 342*.
control in clean rooms (Whitfield et al), *STP 342*.
enumeration of particulate matter by the scattered light technique (Pudvin), *STP 342*.
gravity-settling technique for measuring dust in electron device (Selby), *STP 342*.
polyethylene ultraclean assembly areas (Trace et al), *STP 342*.
Report of Committee D-22, 430.
sizing and counting of particulate contamination (Cotton and Williamsen), *STP 342*.
Aircraft structures
aluminum sandwich panel fatigue test (Buntin and Love), *STP 338*.
estimation of fatigue performance (Schijve), *STP 338*.
fatigue research in the Navy (Rosenfeld), *STP 338*.
fatigue tests of beam specimens (Mordfin and Halsey), *STP 338*.
Albrecht, C. O.: Statistical evaluation of a limited number of fatigue test specimens including a factor of safety approach, *STP 338*.
Alcohols. Report of Committee E-15, 491.
Alexander, A. J., *see* Brandt, F. A., and Alexander, A. J.
Alkalies. Report of Committee E-15, 491.
Allen, J. R. (discussion), *STP 344*.
Allen, J. W., *see* Watson, J. F., Christian, J. L., and Allen, J. W.
Allen, M. H.: Introduction, *STP 320*.
Allen, R. C.: Continuous automatic boiler water silica analysis, *STP 337*.

INDEX

Boland, Paul. *See* Fleming, J. D., Boland, Paul, and Harris, J. N.

Bolt, C. C. *See* Truman, C. L., Bolt, C. C., and Green, W. R.

Bolted joints, effect of pin-interference and bolt torque on fatigue strength (Mittenbergs and Beall, Jr.), 671.

Bond strength
of brick masonry (Ritchie and Davison), *STP 320*.
of mortar to brick (Kampf), *STP 320*.
of two concrete surfaces (Wakeman, Stover, and Galloway) *MR&S*, April, 299.

Bono, J.: Method for fire tests of floor and ceiling assemblies, *STP 344*.

Borofsky, A. J., and Partridge, J.: Doping of germanium transistor surfaces by fluid-base encapsulant systems, *STP 342*; *see also* Partridge, J. and Borofsky, A. J.

Boron, high-strength and modulus brittle materials in filament and composite form (Clark, Gunn, and Talley), *STP 327*.

Borosic, J. *See* Krusos, J. N., Kjelby, A. S., Borosic, J., and Eck, F. B.

Bozozuk, M., Johnston, G. H., and Hamilton, J. J.: Deep bench marks in clay and permafrost areas, *STP 322*.

Brako, F. D. *See* Wexler, A. S. and Brako, F. D.

Brandt, F. A., and Alexander, A. J.: Effect of neutron irradiation at 550 F on Charpy impact properties of ASTM A 302 grade B steel, *STP 341*.

Brennan, P. J. and Nemerow, N. L.: Studies of asbestos-cement pipe and plate, *MR&S*, March, 217.

Breyer, N. N. (discussion), 533.

Brick
bond of mortar to brick (Kampf), *STP 320*.
dimensional changes due to moisture (Hosking and Hueber), *STP 320*.
dimensional changes of masonry in relation to soundness of bricks and mortars (Ritchie), *STP 320*.

Brick masonry
bond strength and resistance to moisture penetration of brick masonry (Ritchie and Davison), *STP 320*.
testing high-bond clay masonry assemblages (Monk, Jr.), *STP 320*.

Briggs, Charles W.: Significance of discontinuities in steel castings on basis of destructive testing, *MR&S*, June, 472.

Brinkman, J. A. (discussion), *STP 341*.

Brodrick, R. F. (discussion), *STP 338*.

Brothers, A. J., Martens, H. E., and Wood, H. L.: Properties of welded high-strength titanium alloy sheet, 646.

Brown, G. (discussion) *STP 327*.

Brown, G. and Davis, G. E.: Preparation and testing of NOL rings from preimpregnated rovings, *STP 327*.

Brown, G. W., and Work, C. E.: Evaluation of influence of cyclic prestressing on fatigue limit, 706.

Brown, J. A.: Factors related to use of sulfur hexafluoride as a gaseous dielectric, *STP 346*.

Brown, O. E.: Use of x-ray emission spectroscopy in chemical analysis of cement, raw materials, and raw mix, 904.

Brown, P. P.: Introduction, *STP 322*.

Brown, W. F., Jr. (discussion), 797; *see also* Shannon, J. L., Jr., and Brown, W. F., Jr.

Brunauer, S., and Copeland, L. E.: Physical adsorption of gases and vapors on solids, *STP 340*.

Buckingham, E. M.: Investigation and correction of landslides, *STP 322*.

Budd, M. S.: Empirical rate-of-solution apparatus, *MR&S*, May, 363.

Building constructions
effect of restraint on fire resistance of pre-stressed concrete (Selvaggio and Carlson), *STP 344*.
fire endurance tests of wall and partition assemblies (Bletzacker), *STP 344*.
fire tests of floor and ceiling assemblies (Bono), *STP 344*.

Report of Committee E-6, 475.

Building stones. Report of Committee C-18, 306.

Bulat, T. J. (discussion), *STP 342*; Role of cavitation in sonic energy cleaning, *STP 342*.

Buntin, W. D., and Love, T. S.: Aluminum sandwich panel fatigue test under Mach-2.4 cruising conditions, *STP 338*.

Burk, Maksymilian: Determination of thermal conductivity of beryllia rod by measuring axial temperature distribution, *MR&S*, Jan., 25.

Burmister, D. M.:
Physical stress-strain, and strength responses of granular soils, *STP 322*.
Prototype load-bearing tests for foundations of structures and pavements, *STP 322*.

Burn resistance, decorative plastics laminates, (Rusch), *MR&S*, April, 273.

Burns, J. W. and Telk, C. L.: Preparation and properties of single crystals of aluminum antimonide, *STP 342*.

Burns, R. M.: Corrosion in relation to metallic surfaces, *STP 340*.

C

Cable insulation. Report of Committee D-27, 437.

Cabrera, N.: On stability of structure of crystal surfaces, *STP 340*.

Cadmium
hydrogen embrittlement due to electrolytic cadmium plating (Johnson), *STP 345*.
Report of Committee B-2, 163.

Cahn, Lee: Dynamic weight change of membrane filter with humidity, *MR&S*, May, 377.

Cairns, R. E., Jr. and Grant, N. J.: Mechanical properties of a chromium—1 per cent columbium alloy, 566.

Calish, S. R.: Coordinating Research Council research techniques for automatic transmission fluids, *STP 334*; (discussion), *STP 334*.

Calorimetry of portland cement
application of heat-of-solution procedures to determination of heat of hydration (Newman and Berman), 852.

effect of procedures on determination of heat of solution (Berman and Newman), 830.

Canner, Irving. *See* Goldspiel, Solomon; Canner, Irving, and Ordóñez, José.

Cannon, W. A. (discussion), *STP 340*.

Capacitance of etched aluminum foils (Bakish and Kornhaas), *MR&S*, Aug., 640.

Capacitor insulation. Report of Committee D-27, 437.

Carbon

- Report of Committee C-5, 264.
- Report of Committee D-28, 442.

Carbon black. Report of Committee D-24, 434.

Carbonate rocks, alkali-carbonate rock reactivity (Gillott), 1195.

Carden, A. E.: Thermal fatigue—Part I. Analysis of conventional experimental method, 735.

Carey, R. H., *see* Lander, L. L., and Carey, R. H.

Carlson, C. C., *see* Selvaggio, S. L., and Carlson, C. C.

Carlson, R. E.: Fire marshal's point of view on fire tests, *STP 344*.

Carman, C. M., Armiento, D. F., and Markus, H.: Low-cycle fatigue characteristics of ultra-high-strength steels, *STP 338*.

Carmichael, E. S. (discussion), *STP 334*.

Carr, F. L., *see* DeSisto, T. S., Carr, F. L., and Larson, F. R.

Carter, T. H.: Building official's point of view on fire tests, *STP 344*.

Cast iron. Report of Committee A-3, 125.

Castings, steel, significance of discontinuities, (Briggs), *MR&S*, June, 472.

Catalysis and chemisorption (Emmett), *STP 340*.

Cathodes. Report of Committee F-1, 506.

Cavitation

- effect of temperature on ultrasonic cavitation of fluorinated solvents (Smallwood), *STP 342*.
- role of cavitation in sonic energy cleaning (Bulat), *STP 342*.

Cedergren, H. R. (discussion), *STP 322*; *see also* Smith, T. W. and Cedergren, H. R.

Cedergren, H. R., and Weber, W. G.: Subsidence of California Highway, *STP 322*.

Cellulose. Report of Committee D-23, 432.

Cement

- calorimetry of portland cement. I. Effect of various procedures on determination of heat of solution (Berman and Newman), 830; II. Application of various heat-of-solution procedures to determination of heat of hydration (Newman and Berman), 852.
- chemical analysis of cement, raw materials, and raw mix (Brown), 904.
- control of false set by the use of anhydrite and gypsum blends (Sawyer), 918.
- effect of added gypsum on 1-day strength, (Kennedy), *MR&S*, July, 567.
- Report of Committee C-1, 252.
- significance of false set tests (Gilliland), 880.
- significance of tests of fineness (Kester), 866.
- significance of tests for heat of hydration of cement (McCoy), 861.
- significant time-of-set studies and their possi-

ble relation to current time of set problems (Berger), 886.

solid-liquid reactions in portland cement pastes (discussion), *MR&S*, Jan., 36.

ultraviolet spectrophotometry for determining lignosulfonate additions (Wexler and Brako), *MR&S*, May, 364.

Cement, asphalt, relation of empirical tests to fundamental viscosity (Griffith and Puzinaskas), *STP 328*.

Cemented carbides. Report of Committee B-9, 240.

Ceramic whitewares. Report of Committee C-21, 309.

Ceramics

- decay products of radium (Gabrysh, Eyring, Bezirjian, and Merrill), *MR&S*, Nov., 902.
- diametral-compression test (Rudnick, Hunter, and Holden), *MR&S*, April, 283.

Report of Committee C-8, 268.

Report of Committee C-25, 316.

Report of Committee D-9, 373.

Cermets

- thermal expansion of titanium carbide cermets (Harrington and Rowe), 620.
- thermal expansion of tungsten carbide cermets (Harrington and Rowe), 633.

Chafey, J. E., *see* Christian, J. L., Hurlich, A., Chafey, J. E., and Watson, J. F.

Chance, D. (discussion), *STP 340*.

Channon, S. L., and Rubin, L.: Comparative evaluation of methods for measurement of hoop tensile strength by means of an NOL type filament wound ring, *STP 327*.

Charpy test

- C-notch impact test for steels at high hardnesses (Steven and Handyside), 1122.
- subsize charpy impact specimens (Fahey and Kula), 1147.

Chatterji, S. (discussion) *MR&S*, Jan., 36.

Chemical analysis. Report of Committee E-3, 462.

Chemical resistance of asbestos-cement pipe (discussion), *MR&S*, Nov., 918.

electronic glasses (Wiens), *STP 342*.

Chemicals. Report of Committee E-15, 491.

Chemisorption and catalysis (Emmett), *STP 340*.

Chockie, L. J., Holmes, J. J., and Tobin, J. C.: In-reactor creep measurements on zircaloy-2, *STP 341*.

Chojnacki, B., *see* Smith, P., and Chojnacki, B.

Chow, J. G. Y., McRickard, S. B., and Gurinsky, D. H.: Mechanical properties of irradiated iron and iron alloys, *STP 341*.

Christensen, R. H. (discussion), *STP 338*.

Christian, J. L. (discussion), 825.

Christian, J. L., Hurlich, A., Chafey, J. E., and Watson, J. F.: Effects of impurity elements and cold rolling on the mechanical properties of titanium-5Al-2.5Sn alloy at room and cryogenic temperatures, 578.

Christian, J. L., Hurlich, A., and Watson, J. F.: Low-cycle fatigue properties of complex welded joints of high-strength 301, 304L, 310,

INDEX

Christian, J. L., *et al. (continued)*
and AM-355 stainless steel sheet materials at cryogenic temperatures, *STP 338*.

Christian, J. L., *see also* Watson, J. F., Christian, J. L., and Allen, J. W.

Chromatography
Report of Committee D-3, 345.
Report of Committee E-19, 498.

Chromium alloy, mechanical properties (Cairns and Grant), 566.

Chu, C. C., *see* Coskren, R. J., Chu, C. C., and Morgan, H. M.

Cibois, E., Lemaire, J., and Weisz, M.: Irradiation embrittlement and hardening of steels and zircaloy-2 in pressurized components, *STP 341*.

Cigarette-burn resistance, decorative plastics laminates (Rusch), *MR&S*, April, 273.

Cinefluorography of solid fuel rocket motors (Criscuolo and Polansky), *STP 350*.

Clark, D. (discussion), 827.

Clark, W. J., Gunn, K. M., and Talley, C. P.: Evaluation of high-strength- and modulus-brITTLE materials in filament and composite form, *STP 327*.

Clauss, F. J., Drake, S. P., and Young, W. C.: Lubrication of ball bearings for space applications, *STP 345*.

Clay
deep bench marks in clay and permafrost areas (Bozozuk, Johnston, and Hamilton), *STP 322*.
testing high-bond clay masonry assemblages (Monk), *STP 320*.

Clay pipe. Report of Committee C-4, 263.

Clean rooms
airborne contamination control in clean rooms and work stations (Whitfield, Mashburn, and Neitzel), *STP 342*.
dust count data from different measuring methods (Marsh), *STP 342*.
enumeration of airborne particulate matter by scattered light technique (Pudvin), *STP 342*.
measuring airborne dust in electron device processing areas (Selby), *STP 342*.
polyethylene ultraclean assembly areas (Trace, White, and Rich), *STP 342*.

Report of Committee F-1, 506.

sizing and counting of airborne particulate contamination (Cotton and Williamson), *STP 342*.

Cleaning
cavitation in sonic energy cleaning (Bulat), *STP 342*.
effect of temperature on resistance of ultra-pure organic solvents (Balsbaugh and Smith), *STP 342*.
effect of temperature on ultrasonic cavitation of fluorinated solvents (Smallwood), *STP 342*.
electronic grade hydrogen peroxide (Black and Hawkinson), *STP 342*.
evaluating sonic cleaning systems (Farris), *STP 342*.
health hazard factors in operation of metal

degreasing tanks (Morrill, Blankenhorn, and Woolrich), 1303.

ionized gas jet surface cleaner (Krieger), *STP 342*.

solvent vapor degreasing (Kearney), 1316.
vapor degreasing with trichlorotrifluoroethane (Ramsey), 1324.

Clinard, R. H. (discussion), *STP 334*.

Clutch plate, effect of lubricant on durability (Davison), *STP 334*.

Coal. Report of Committee D-5, 355.

Coal products. Manual on hydrocarbon analysis, *STP 332*.

Coatings,
film, with radioisotope-tagged electroless nickel substrates, (Goldspiel, Canner, and Ordonez), *MR&S*, July, 562.
measuring thickness (Mansour), *MR&S*, Jan., 29.

Coden for periodical titles, *STP 329*.

Coggeshall, A. D. (discussion), *STP 327*.

Cohesive soils, human factor in determining plastic limit (Ballard and Weeks), *MR&S*, Sept., 726.

Coining for improvement in 7075-T651 aluminum alloy fatigue life (Whaley), 692.

Coke. Report of Committee D-5, 355.

Cole, C. K., *see* Hanley, D. P., and Cole, C. K.

Color. Report of Committee E-12, 486.

Columbium
mechanical properties of a chromium—1 per cent columbium alloy (Cairns and Grant), 566.

Report of Committee B-2, 163.

Composite materials, effect of composition and particle-size distribution on the static elastic moduli of tungsten-copper composite materials (Krock), 605.

Compression tests
bearing capacity of soils (Anand and Makol), *MR&S*, March, 201.

NOL rings (Elkin) *STP 327*.

NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.

pyrolytic graphite from room temperature to 5000 F (Gobble and Salmen), *STP 345*.

Compressive strength
effect of added gypsum on 1-day strength of mortar (Kennedy), *MR&S*, July, 567.

effect of salt in concrete on compressive strength of reinforcing steel (Griffin and Henry), 1046.

of concrete, effect of sampling and job curing procedures (Wagner), *MR&S*, Aug., 629.

of parallel filament reinforced plastics (Fried and Winans), *STP 327*.

predicting from properties of fresh concrete (Malhotra), *MR&S*, June, 483.

Computer analysis of micrographs, *MR&S*, Dec., 1025.

Concrete
accelerated strength testing of concrete cylinders (Smith and Chojnacki), 1079.

adhesion between two bonded concrete surfaces, (Wakeman, Stover, and Galloway), *MR&S*, April, 299.

alkali-carbonate rock reactivity (Gillott), 1195.
analysis of sodium by fluorescence photometry (Pflug and Crumpton), *MR&S*, July, 556.
compressive strength (Malhotra), *MR&S*, June, 483.
crystal growth in portland-cement concrete (Hansen), 932.
diametral-compression test (Rudnick, Hunter, and Holden), *MR&S*, April, 283.
effects of curing temperature and creep characteristics of expansive concrete (Klein and Bertero), 1008.
effect of salt in concrete on compressive strength, water vapor transmission, and corrosion of reinforcing steel (Griffin and Henry), 1046.
effect of sampling and job curing procedures on compressive strength (Wagner), *MR&S*, Aug., 629.
fire resistance of prestressed concrete (Selvaggio and Carlson), *STP 344*.
freezing-and-thawing durability for concrete (Cordon and Merrill), 1026.
high-temperature behavior of aluminous cement concretes containing different aggregates (Zoldners, Malhotra, and Wilson), 966.
moisture content of hardened concrete by dielectric properties (Bell, Leonards, and Dolch), 996.
Report of Committee C-9, 270.
strength of field-fabricated concrete test beams (discussion), *MR&S*, April, 277.
surface soundness and adhesion testing of concrete (Wittenwyler), 1037.
volume change as a measure of freezing-and-thawing resistance (Wills, Lepper, Gaynor, and Walker), 946.
Concrete pipe. Report of Committee C-13, 292.
Connolly, R. A.: Effect of 7-yr marine exposure on organic materials, *MR&S*, March, 193.
Contacts, electrical, *STP 56-0*.
Contamination control
control in clean rooms and work stations (Whitfield, Mashburn, and Neitzel), *STP 342*.
dust count data (Marsh), *STP 342*.
enumeration of airborne particulate matter by scattered light technique (Pudvin), *STP 342*.
measuring airborne dust in electron device processing areas (Selby), *STP 342*.
polyethylene ultraclean assembly areas (Trace, White, and Rich), *STP 342*.
Report of Committee F-1, 506.
silting index (Dwyer), *STP 342*.
sizing and counting airborne particulate contamination (Cotton and Williamsen), *STP 342*.
Cook, J. F. (discussion), *STP 334*.
Coombs, V. D.: A device for low-cost fatigue testing, 657.
Coordinating Research Council research techniques for automatic transmission fluids (Clish), *STP 334*.
Copeland, L. E., *see* Brunauer, S., and Copeland, L. E.

Copper and copper alloys
effect of composition and particle-size distribution on the static elastic moduli of tungsten-copper composite materials (Krock), 605.
effect of neutron irradiation on precipitation hardening alloys (Cupp), *STP 341*.
elevated-temperature behavior of annealed 70-30 copper-nickel (Donachie, Steele, and Sheppard), 598.
fatigue properties of age-hardened alloys (Wolf and Dodd), *MR&S*, Sept., 734.
fracture of single crystals under explosive loading (Glass, Golaski, Misey, and Moss), *STP 336*.
low pressure spall thresholds (Smith), *STP 336*.
Report of Committee B-1, 153.
Report of Committee B-2, 163.
Report of Committee B-5, 177.
Cordon, W. A., and Merrill, D.: Requirements for freezing-and-thawing durability for concrete, 1026.
Corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.
Corrosion
effect of salt in concrete on corrosion of reinforcing steel (Griffin and Henry), 1046.
metallic surfaces (Burns), *STP 340*.
Report of Advisory Committee on Corrosion, 249.
Report of Committee A-5, 129.
Report of Committee A-10, 146.
Report of Committee B-3, 166.
Corrosion inhibitors, selection and use of engine coolants, *STP 120-A*.
Coskren, R. J., Chu, C. C., and Morgan, H. M.: Impact performance of HT-1 and nylon webbings to Mach 0.7, *STP 336*.
Cotton, R. A., and Williamsen, C. T.: Referee method for sizing and counting of airborne particulate contamination, *STP 342*.
Cotton. Report of Committee D-13, 388.
Countryman, D. (discussion), *STP 344*.
Coyner, E. C. and Hanesian, D.: Electrical insulating gases—hexafluorethane and octafluorocyclobutane, *STP 346*.
Crack growth, electric potential technique for determining (Anctil, Kula, and DiCesare), 799.
Crack propagation
fatigue of metals (Hardrath), *MR&S*, Feb., 116.
field emission microscope (Hoening and Creighton), *MR&S*, Nov., 899.
Cracking
dimensional changes due to moisture in bricks (Hosking and Hueber), *STP 320*.
dimensional changes of masonry in relation to soundness of bricks and mortars (Ritchie), *STP 320*.
technique for making shallow cracks in sheet metals (discussion), *MR&S*, Sept., 738.
Crary, J. F. (discussion), *MR&S*, April, 278.
Craze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.

INDEX

Crede, C. E.: Mechanics of package cushioning, *STP 324*.

Creep
characteristics of expansive concretes (Klein and Bertero), 1008.
in-reactor creep measurements on zircaloy-2 (Chockie, Holmes, and Tobin), *STP 341*.

Creighton, D. L. *See* Hoenig, S. A. and Creighton, D. L.

Criscuolo, E. L.: Correlation of radiographic penetrameters, *MR&S*, June, 465.

Criscuolo, E. L., and Polansky, D.: Cinefluorography of solid fuel rocket motors, *STP 350*.

Criscuolo, E. L., and Wenk, S. A.: Introduction, *STP 350*.

Crow, S. C.: New method for determining Poisson's ratio, *MR&S*, Dec., 996.

Crumpton, C. F. *See* Pflug, H. D. and Crumpton, C. F.

Cryogenics
effect of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K (Watson, Christian, and Allen), *STP 345*.
low-cycle fatigue properties of complex welded joints of high-strength 301, 304L, 310, and AM-355 stainless steel sheet materials at cryogenic temperatures (Christian, Hurlich, and Watson), *STP 338*.

Crystal growth as a source of expansion in portland-cement concrete (Hansen), 932.

Crystal oscillators, characteristics of frequency control devices for satellite environments (Spencer and Reynolds), *STP 342*.

Crystal pulling. Report of Committee F-1, 506.

Crystal surfaces
field ion microscopy of surface structures on an atomic scale (Muller), *STP 340*.
stability of structure of crystal surfaces (Cabrera), *STP 340*.

Cupp, C. R.: Effect of neutron irradiation on precipitation hardening alloys, *STP 341*; (discussion), *STP 341*.

Curing temperature effects of expansive concretes (Klein and Bertero), 1008.

Currin, C. G. (discussion), *STP 342*; *see also* Smith, C. R. and Currin, C. G.

Currin, C. G. and Smith, F. A.: An instrument for the contactless measurement of minority carrier lifetime, *STP 342*.

Cushioning of packages (Crede), *STP 324*.

Cut slope design and landslides (Smith and Cedergren), *STP 322*.

Cyanogen compounds, analytical methods and instrumentation for determining (Laney and Zabban), *STP 337*.

Cyclic strains, suppression of Bauschinger effect and changes in flow pattern of ductile metals (Polakowski), 535.

Czochralski crystals
evaluation of polycrystalline silicon batches for Czochralski crystal pulling (Kramer), *STP 342*.
modular dopant for silicon Czochralski crystals (Smith and Currin), *STP 342*.

D

Daehn, W. W.: Development and installation of piezometers for measurement of pore-field pressures in earth dams, *STP 322*; (discussion), *STP 322*.

Dallas, R. N.: Evaluation of hoop tension tests as a method of screening materials for filament winding applications, *STP 327*.

Dams, piezometers for measurement of pore-field pressures in earth dams (Daehn), *STP 322*.

Darragh, R. D., *see* Roberts, D. V., and Darragh, R. D.

Davis, G. E., *see* Brown, G., and Davis, G. E.

Davis, J. W.: ASTM task group round-robin testing, *STP 327*.

Davis, R. S., *see* Johnson, P. C., Stein, B. A., and Davis, R. S.

Davison, E. D.: Effect of lubricant on automatic transmission clutch plate durability, *STP 334*.

Davison, J. I., *see* Ritchie, T., and Davison, J. I.

Decarburization effect on fracture toughness of ultrahigh-strength sheet steel (Sheehan and Manning), *STP 345*.

Definitions. Report of Committee E-8, 480.

Deflection temperature, measurement of (Graves and Loveless), *MR&S*, Jan., 33.

Degreasing
health hazard factors in operation of metal degreasing tanks (Morrill, Blankenhorn, and Woolrich), 1303.
solvent vapor degreasing as applied to missile containers, conduits, transports, and hardware (Kearney), 1316.
vapor degreasing with trichlorotrifluoroethane (Ramsey), 1324.

Della Rocca, R. (discussion), *STP 327*.

DeLollis, N. J. (discussion), *STP 340*.

DeSisto, T. S., Carr, F. L., and Larson, F. R.: Influence of section size on mechanical properties and fracture toughness of 7075-T6 aluminum, 6Al-6V-2Sn titanium, and AISI 4340 steel, 768.

Detergents. Report of Committee D-12, 385.

Dewatering control by use of piezometers (Gould), *STP 322*.

DiCesare, E.: Mechanical properties of cold-drawn martensitic SAE 4340 steel rod, 517; *see also* Antil, A. A., Kula, E. B., and DiCesare, E.

Die castings. Report of Committee B-6, 184.

Dielectric breakdown, gaseous insulation (Manning), *STP 346*.

Dielectric properties for determination of moisture content of hardened concrete (Bell, Leonards, and Dolch), 996.

Dielectric strength
electrical insulating gases—hexafluoroethane and octafluorocyclobutane (Coyner and Hanesian), *STP 346*.
fluorocarbon gases and volatile liquids (Sargent and LaZerte), *STP 346*.
gaseous insulation (Manning), *STP 346*.
round-robin tests of test cells for dielectric strength of gases (Liao and Shombert), *STP 346*.

use of sulfur hexafluoride as a gaseous dielectric (Brown), *STP 346*.

Diffusion-controlled reaction in alloys, effects of radiation on (Wechsler), *STP 341*.

Dilatometry for measurement of unrestrained shrinkage on resin curing (Rosen and Fornof), *STP 327*.

Distillation methods, interlaboratory study of (discussion), *MR&S*, Sept., 722.

Dodd, R. A. *See* Wolff, R. P. and Dodd, R. A.

Dolan, T. J. (discussion), 733; *STP 338*.

Dolch, W. L., *see* Bell, J. R., Leonards, G. A., and Dolch, W. L.

Donachie, M. J., Jr., Steele, R. K., and Shepard, R. G.: Elevated-temperature behavior of annealed 70-30 copper-nickel, 598.

Donlan, T. R. (discussion), *MR&S*, Sept., 722.

Dorsey, J. R.: Accuracy of interplanar spacing determination by 50-kv electron diffraction, *STP 339*.

Dougherty, J. E., and Spicer, H. C., Jr.: Helicopter fatigue substantiation procedures for civil aircraft, *STP 338*.

Doyle, C. D.: Softening-range tester for powdered samples, *MR&S*, Nov., 915.

Drake, S. P., *see* Clauss, F. J., Drake, S. P., and Young, W. C.

Duckworth, R. J., *see* Watt, A. K., and Duckworth, R. J.

Ductility

- determining bend ductility of sheet between -196 and 300 C (Nelson, Rhodes, and Leunis), *MR&S*, April, 296.
- Report of Committee A-3, 125.

Dunleavy, R. A. (discussion), *STP 328*.

Dunn, T. J., *see* Kelly, P. P. and Dunn, T. J.

Dunsby, J. A. (discussion), 690.

Dunthorne, H. B. (discussion), *STP 338*.

Durelli, A. J. and Ferrer, L.: New methods to determine elastic constant, *MR&S*, Dec., 988.

Dust count

- comparison of data obtained from different measuring methods (Marsh), *STP 342*.
- gravity-settling technique for measuring airborne dust in electron device processing areas (Selby), *STP 342*.
- enumeration of airborne particulate matter by the scattered light technique (Pudvin), *STP 342*.
- referee method for sizing and counting of airborne particulate contamination (Cotton and Williamsen), *STP 342*.

Duvall, P. F.: Quality control procedure for rocket motor cases: reinforced plastic versus steel, *STP 327*.

Dwyer, J. L.: The silting index: an evaluation of micron and submicron contamination in liquids, *STP 342*.

Dynamic testing

- experimental solid dynamics (Gerard, Papirno, and Becker), *STP 336*.
- mechanical properties of polyethylene (Matsuoka and Aloisio), *STP 336*.
- metals at strain rates up to 200 sec (Smith), *MR&S*, Sept., 713.

E

Eakins, W. J. (discussion), *STP 327*.

Earth dams, piezometers for the measurement of pore-field pressures (Daehn), *STP 322*.

Earth movements

- slope indicator to measure movements in earth slopes and bulkheads (Henderson and Matich), *STP 322*.
- slope measuring devices to determine movements in earth masses (Wilson), *STP 322*.

Eck, F. B., *see* Krusos, J. N., Kjelby, A. S., Borosic, J., and Eck, F. B.

Eddy current inspection of aluminum alloy tube (Kunkle and Hoch), *MR&S*, May, 353.

Ehrenburg, D. O.: Shortcut for grain-size analysis, *MR&S*, Dec., 987.

Eickner, H. W., *see* Peters, C. C., and Eickner, H. W.

Elastic constant, new methods to determine (Durelli and Ferrer), *MR&S*, Dec., 988.

Elastic modulus of tungsten-copper composite materials (Krock), 605.

Electrical conductors. Report of Committee B-1, 153.

Electrical contacts

- bibliography and abstracts, *STP 56-0*.
- materials problems (Keil), *MR&S*, June, 489.
- Report of Committee B-4, 174.

Electrical insulation

- electrical insulating gases—hexafluoroethane and octafluorocyclobutane (Coyner and Hanesian), *STP 346*.
- fluorocarbon gases and volatile liquids (Sargent and LaZerte), *STP 346*.
- gaseous insulation (Manning), *STP 346*.
- Report of Committee D-9, 373.
- Report of Committee D-27, 437.
- Report of Committee F-1, 506.
- sulfur hexafluoride as a gaseous dielectric (Brown), *STP 346*.
- test cells for dielectric strength of gases (Liao and Shombert), *STP 346*.

Electrical potential technique for determining slow crack growth (Ancil, Kula, and Di Cesare), 799.

Electrodeposited coatings

- Report of Committee B-8, 212.
- Report of Advisory Committee on Corrosion, 249.

Electromagnetic testing. Report of Committee E-7, 477.

Electron diffraction

- accuracy of interplanar spacing determination by 50-kv electron diffraction (Dorsey), *STP 339*.
- interpretation of electron diffraction patterns (Sturkey), *STP 339*.
- precision and accuracy in measurement of electron diffraction patterns (Beu), *STP 339*.
- Report of joint committee on chemical analysis by powder diffraction methods, 504.

INDEX

Electron metallography
 accuracy of interplanar spacing determination by 50-kv electron diffraction (Dorsey), *STP 339*.
 comparison of replicas and thin sections of Ni-O-Nel (Pellier), *STP 339*.
 electron probe microanalysis (Philibert), *STP 339*.
 identification of phases in age-hardenable nickel - copper - aluminum - titanium alloy (Fragetta and Mihalisin), *STP 339*.
 interpretation of electron diffraction patterns (Sturkey), *STP 339*.
 precision and accuracy in measurement of electron diffraction patterns (Beu), *STP 339*.
 thinning metallic specimens for transmission electron microscopy (Glenn and Raley), *STP 339*.
 transmission electron microscopy (Melton, Schwartz, and Kiefer), *STP 339*.

Electron microstructure. Report of Committee E-4, 470.

Electron microscopy
 thinning metallic specimens for transmission electron microscopy (Glenn and Raley), *STP 339*.
 thinning technique for transmission electron microscopy (Melton, Schwartz, and Kiefer) *STP 339*.
 Electron probe microanalysis (Philibert), *STP 339*.

Electron tubes, water in (Frost), *STP 342*.

Electronic ceramic materials. Report of Committee C-25, 316.

Electron components, capacitance and microstructure of etched aluminum foils (Bakish and Kornhaas), *MR&S*, Aug., 640.

Electronics. Report of Committee F-1, 506.

Elkin, R. A.: Compression testing of NOL rings, *STP 327*.

Ellis, W. P. (discussion), *STP 344*.

Ely, J. F. *see* Ward, G. C. and Ely, J. F.

Ely, R. E.: High-speed compression testing of thermoplastics, *STP 336*.

Embrittlement, hydrogen, due to electrolytic cadmium plating (Johnson), *STP 345*.

Emission spectroscopy
 Report of Committee E-2, 456.
 use in chemical analysis of cement, raw materials, and raw mix (Brown), 904.

Emmett, P. H.: Chemisorption and catalysis, *STP 340*.

Encapsulants
 doping of germanium transistor surfaces by fluid-base encapsulant systems (Borofsky and Partridge), *STP 342*.
 Report of Committee D-9, 373.

Engine antifreezes. Report of Committee D-15, 397.

Engine coolants, selection and use of, *STP 120-A*.

Engine tests
 1962 status of test sequences I, II, and III (Bennett and Kabel), *STP 334*.
 engine-operating sequence V tests for MS oils in stop-and-go service (Potter), *STP 334*.

sequence IV for API service MS oils (Beckman and Fales), *STP 334*.
 sequences for evaluating automotive lubricants for API service MS, *STP 315-A*.
 single-cylinder test techniques for engine oils: part 1, CRC L-38 test work (Hall and Martin); part 2, development of CRC L-43 test technique (McLaughlin), *STP 334*.
 where do we go from here in motor oil testing (McReynolds), *STP 334*.

Environmental testing
 chamber for rotating-beam fatigue testing machines (Bennett), *MR&S*, June, 480.
 effect of marine exposure on organic materials (Connolly), *MR&S*, March, 193.
 optimum mounting angle for outdoor weathering of plastics (Newland, Schulken, and Tamblyn), *MR&S*, June, 487.

stress-corrosion cracking of type 304 stainless steel (Logan, McBee, and Romanoff), *MR&S*, Aug., 635.

stress-cracking of polyethylene (Suezawa, Hojo, and Ikeda), *MR&S*, July, 550.

Epitaxial layers
 evaluation of semiconductor epitaxial layers (Rose), *STP 342*.

Report of Committee F-1, 506.

Epoxy resins
 adhesion between two bonded concrete surfaces (Wakeman, Stover, and Galloway), *MR&S*, April, 299.

NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.

water absorption tests of epoxy casting resins (Lee), *MR&S*, Nov., 910.

Epstein, S. (discussion), 779.

Erb, C. M. (discussion), *MR&S*, April, 289.

Erbin, E. F. (discussion), 826.

Erickson, P. W. (discussion), *STP 327*.

Eshbaugh, R.: Photoelastic studies of filament-wound pressure vessels, *STP 327*.

Ethyl cellulose, high-speed compression testing of thermoplastics (Ely), *STP 336*.

European market, technical aspects of motor oils market in France and in Europe (Thiery), *STP 334*.

Expansion
 alkali-carbonate rock reactivity (Gillott), 1195.
 crystal growth as source of expansion in portland-cement concrete (Hansen), 932.
 dimensional changes due to moisture in bricks and brickwork (Hosking and Hueber), *STP 320*.

Expansion joint fillers, bitumen content (Horowitz and Mandel), *MR&S*, Sept., 723.

Experimental design, ranking laboratories by round-robin tests (Youden), *MR&S*, Jan., 9.

Explosives
 fracture of single crystals under explosive loading (Glass, Golaski, Misey, and Moss), *STP 336*.

metallurgical effect of explosive straining (Henriksen, Lieberman, Wilkin, and McPherson), *STP 336*.

Extrusion plastometer for measuring flow rates

of polyethylene and ethylene copolymers (Harban and McGlamery), *MR&S*, Nov., 906.

Eyre, B. L.: Study of neutron irradiation in alpha iron and a 1Cr-0.5Mo pressure vessel steel, *STP 341*.

Eyring, H. *See* Gabrysh, A. F., Eyring, H., Bezirjian, O. H., and Merrill, J. H.

F

Fabrication beryllium-faced sandwich structures (Krusos, Kjelby, Borosic, and Eck), *MR&S*, Oct., 825.

Fahey, N. H., and Kula, E. B.: Investigation of subsize charpy impact specimens, 1147.

Fales, W. K., *see* Beckman, E. W., and Fales, W. K.

Fall out. Report of Committee D-22, 430.

False set

control by use of anhydrite and gypsum blends (Sawyer), 918.

significance of tests (Gilliland), 880.

Farkas, E. (discussion), 930.

Farris, J. A.: Methods of evaluating sonic cleaning systems, *STP 342*.

Fatigue

aircraft structural fatigue research in the Navy (Rosenfeld), *STP 338*.

aluminum sandwich panel fatigue test under Mach-2.4 cruising conditions (Buntin and Love), *STP 338*.

application of induction heating to high-temperature fatigue testing (Harper, Feilbach, and Libsch), 684.

effect of mean stress on fatigue strength of stainless steel sheet in the range from 10 to 10⁷ cycles (Bell and Benham), *STP 338*.

effect of pin-interference and bolt torque on fatigue strength of lug joints (Mittenbergs and Beall, Jr.), 671.

effect of stress state on high-temperature low-cycle fatigue (Kennedy), *STP 338*.

empirical analysis of fatigue strength of pin-loaded lug joints (Mittenbergs), *STP 338*.

environmental chamber for rotating-beam fatigue testing machines (Bennett), *MR&S*, June, 480.

fatigue life under random loading (Leybold and Naumann), 717.

fatigue of metals: part 1—mechanics of fatigue (Gohn); part 2—crack propagation and final failure (Hardrath); part 3—engineering and design aspects (Peterson), *MR&S*, Feb., 106, 116, 122.

fatigue performance of aircraft structures (Schijve), *STP 338*.

fatigue testing of aluminum in vacuum (Ham and Reichenbach), *STP 345*.

helicopter fatigue substantiation procedures for civil aircraft (Dougherty and Spicer, Jr.), *STP 338*.

improvement in 7075-T651 aluminum alloy fatigue life by coining (Whaley), 692.

influence of cyclic prestressing on fatigue limit (Brown and Work), 706.

low-cost fatigue testing (Coombs), 657.

low-cycle axial fatigue behavior of mild steel (Yao and Munse), *STP 338*.

low-cycle fatigue characteristics of ultrahigh-strength steels (Carman, Armiento, and Markus), *STP 338*.

low-cycle fatigue of Ti-6Al-4V at -423 F (Hilsen, Yen, and Whiteson), *STP 338*.

low-cycle fatigue properties of complex welded joints of high-strength 301, 304L, 310, and AM-355 stainless steel sheet materials at cryogenic temperatures (Christian, Hurlich, and Watson), *STP 338*.

predicting life of full-scale structures (Smith), *STP 338*.

properties of age-hardened alloys (Wolff and Dodd), *MR&S*, Sept., 734.

radiation effects in reactor structural materials (Reynolds), *STP 341*.

Report of Committee E-9, 481.

spectrum fatigue tests of aircraft beam specimens (Mordfin and Halsey), *STP 338*.

statistical evaluation of fatigue test specimens (Albrecht), *STP 338*.

studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.

thermal fatigue (Carden), 735.

Federal Aviation Agency, helicopter fatigue substantiation procedures for civil aircraft (Dougherty and Spicer), *STP 338*.

Feilbach, W. H., *see* Harper, D. L., Feilbach, W. H., and Libsch, J. F.

Fenstermaker, C. A., *see* Smith, J. C., Fenstermaker, C. A., and Shouse, P. J.

Ferrer, L., *see* Durelli, A. J. and Ferrer, L.

Field emission microscope for observing crack growth (Hoenig and Creighton), *MR&S*, Nov., 899.

Field ion microscopy of surface structures on an atomic scale (Muller), *STP 340*.

Field method for surface soundness and adhesion testing of concrete (Wittenwyler), 1037.

Field percolation tests for sanitary engineering application (Bendixen), *STP 322*.

Field-plate-loading test for bearing capacity of soils (Anand and Makol), *MR&S*, March, 201.

Filament winding

ASTM task group round-robin testing (Davis), *STP 327*.

compression, fatigue, and stress studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.

compression testing of NOL rings (Elkin), *STP 327*.

compressive strength of parallel filament reinforced plastics (Fried and Winans), *STP 327*.

corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.

craze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.

determining hoop stress in composite structures (Hanley and Cole), *STP 327*.

high-strength-and-modulus brittle materials

Filament winding (*continued*)
 in filament and composite form (Clark, Gunn, and Talley), *STP 327*.
 hoop tension tests for screening materials for filament winding applications (Dallas), *STP 327*.
 infrared nondestructive testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
 interlaminar shear properties of sizings and binders for secondary reinforcements using a polar-cut ovaloidal specimen (Perry), *STP 327*.
 laboratory scale filament winding system to produce pressure vessels (Outwater), *STP 327*.
 measurement of hoop tensile strength by means of NOL type filament wound ring (Channon and Rubin), *STP 327*.
 NOL ring test as method for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfeiderer), *STP 327*.
 nondestructive test techniques for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.
 nondestructive tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.
 photoelastic studies of pressure vessels (Eshbaugh), *STP 327*.
 preparation and testing of NOL rings from preimpregnated rovings (Brown and Davis), *STP 327*.
 properties and proposed digital code system for glass fiber reinforcements for filament winding (Perry), *STP 327*.
 quality control procedures for rocket motor cases: reinforced plastic versus steel (Duvall), *STP 327*.
 research on wire-wound composite materials (McGarry and Marshall), *STP 327*.
 single end glass yarn tension test (Pirzadeh and Kennedy), *STP 327*.
 standards for use of preimpregnated roving (Leeds), *STP 327*.
 television x-ray image enlargement system for nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.
 tension test method for glass fiber strands, yarns, and rovings (Hood), *STP 327*.
 tests for filament-wound specimens (Yurenka), *STP 327*.
 tests for parallel filament reinforced plastics (Fried), *STP 327*.
 use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.

Filaments
 behavior of filamentous materials subjected to high-speed tensile impact (Smith, Fenstermaker, and Shouse), *STP 336*.
 evaluation of high-strength-and-modulus brittle materials in filament and composite form (Clark, Gunn, and Talley), *STP 327*.

Fineness, significance of tests (Kester), 866.
 Fink, D. F.: Statistical comparison of modified softening point method with ASTM ring and ball method, *MR&S*, Jan., 14.
 Fink, W. L. (introduction and discussion), *STP 340*.
 Fire tests
 building official's point of view (Carter), *STP 344*.
 effect of restraint on fire resistance of prestressed concrete (Selvaggio and Carlson), *STP 344*.
 fire endurance tests of wall and partition assemblies (Bletzacker), *STP 344*.
 fire marshall's point of view (Carlson), *STP 344*.
 fire tests of floor and ceiling assemblies (Bono), *STP 344*.
 flame-spread tests in a large tunnel furnace (Yuill), *STP 344*.
 hose-stream test (Ingberg), *STP 344*.
 Report of Committee E-5, 473.
 surface flammability as determined by the FPL 8-ft tunnel method (Peters and Eickner), *STP 344*.
 surface flammability measurements by radiant-panel method (Robertson), *STP 344*.
 Fitzgerald, J. E., *see* Alzofon, F. E., Florant, L. E., Ronald, R. K., Vann, M. J., and Fitzgerald, J. E.
 Flame-spread tests in a large tunnel furnace (Yuill), *STP 344*.
 Flammability, surface
 determined by FPL 8-ft tunnel method (Peters and Eickner), *STP 344*.
 measurements by radiant-panel method (Robertson), *STP 344*.
 Fleming, J. D., Boland, Paul, and Harris, J. N.: Porosity measurements by air displacement, *MR&S*, Jan., 20; (discussion), Aug., 643.
 Fletcher, G. A.: Pile load tests and their evaluation, *STP 322*.
 Flexible barrier materials. Report of Committee F-2, 511.
 Flooring damage by heels (discussion), *MR&S*, May, 379.
 Florant, L. E., *see* Alzofon, F. E., Florant, L. E., Ronald, R. K., Vann, M. J., and Fitzgerald, J. E.
 Flow, determining percentage of resin flow in preimpregnated roving (Rubin), *STP 327*.
 Flow rates of polyethylene and ethylene copolymers by extrusion plastometer (Harban and McGlamery), *MR&S*, Nov., 906.
 Flow-stress-strain relationships in tension tests of steel (Nunes), *MR&S*, Sept., 719.
 Fluorescence photometry, analysis of sodium in concrete (Pflug and Crumpton), *MR&S*, July, 556.
 Fluorocarbon gases
 and volatile liquids (Sargent and LaZerte), *STP 346*.
 Report of Committee D-27, 437.
 Foils, etched aluminum, capacitance and microstructure of (Bakish and Kornhaas), *MR&S*, Aug., 640.

Ford, W. F. (discussion), *STP 334*.
Fornof, A. E., *see* Rosen, B. and Fornof, A. E.
Foundations
 areal fill settlements and building foundation behavior at the San Francisco Airport (Roberts and Darragh), *STP 322*.
 problems related to ground surface subsidence in Mexico City (Zeevaert), *STP 322*.
prototype load-bearing tests for foundations of structures and pavements (Burmister), *STP 322*.
subsidence of California highways (Cedergren and Weber), *STP 322*.
Fowler E. W. (discussion), *STP 344*.
Fracture
 brittle fracture in ferritic pressure vessel steels (Nichols and Harries), *STP 341*.
 comparison of test specimens for fracture toughness of high-strength sheet materials (Hickey and Larson), 780.
effect of decarburization on fracture toughness of an ultrahigh-strength sheet steel (Sheehan and Manning), *STP 345*.
electric potential technique for determining slow crack growth (Antil, Kula, and Di-Cesare), 799.
fracture of single crystals under explosive loading (Glass, Golaski, Misey, and Moss), *STP 336*.
influence of section size on fracture toughness of 7075-T6 aluminum, 6Al-6V-2Sn titanium, and AISI 4340 steel (DeSisto, Carr, and Larson), 768.
observing crack growth with field emission microscope (Hoenig and Creighton), *MR&S*, Nov., 899.
service tests of steels for missile motor cases (discussion), *MR&S*, June, 485.
techniques for making shallow cracks in sheet metals (discussion), *MR&S*, Sept., 738.
Fragetta, W. A., and Mihalisin, J. R.: Identification of phases in age-hardenable nickel-copper-aluminum-titanium alloy, *STP 339*.
Freezing and thawing
 requirements for freezing-and-thawing durability for concrete (Cordon and Merrill), 1026.
 volume change as measure of freezing-and-thawing resistance of concrete made with different aggregates (Wills, Lepper, Gaynor, and Walker), 946.
Frequency control, characteristics of devices for satellite environments (Spencer and Reynolds), *STP 342*.
Friction, dynamic, machine for measuring (Sponseller and Gavan), *MR&S*, Dec., 992.
Friction, highway. Report of Committee E-17, 496.
Friction materials. Report of Committee B-9, 240.
Fried, N.: Survey of methods of test for parallel filament reinforced plastics, *STP 327*.
Fried, N. and Winans, R. R.: Compressive strength of parallel filament reinforced plastics: development of a new test method, *STP 327*.
Frost, H. B.: Some experiments on water introduced into electron tubes, *STP 342*.
Fryer, H. C. (discussion), *MR&S*, April, 278.
Fuchs, H. O. (discussion), 714.
Fuels
 hot fuel for a hot aircraft (Johnson), *MR&S*, April, 300.
Report of Committee D-2, 332.
Full-scale fatigue
 aircraft structural fatigue research in the Navy (Rosenfeld), *STP 338*.
 fatigue performance of aircraft structures (Schijve), *STP 338*.
programmed maneuver spectrum fatigue tests of aircraft beam specimens (Mordfin and Halsey), *STP 338*.
small specimen data for predicting life of full-scale structures (Smith), *STP 338*.
Fust, G. W. (discussion), *STP 327*.

G

Gabrysh, A. F., Eyring, H., Bezirjian, O. H., and Merrill, J. H.: Decay products of radium in ceramics and their interaction with matter, *MR&S*, Nov., 902.
Galloway, Frank, *see* Wakeman, C. M., Stover, H. E., and Galloway, Frank.
Gas chromatography
 analysis of aqueous solutions (Baker), *STP 337*.
 compilation of gas chromatographic data, *STP 343*.
Report of Committee E-19, 498.
Gaseous fuels. Report of Committee D-3, 345.
Gases
 electrical insulating gases—hexafluorethane and octafluorocyclobutane (Coyner and Hanesian), *STP 346*.
 electrical insulating. Report of Committee D-27, 437.
fluorocarbon gases and volatile liquids (Sargent and LaZerte), *STP 346*.
gaseous insulation (Manning), *STP 346*.
round-robin tests of test cells for dielectric strength of gases (Liao and Shomber), *STP 346*.
use of sulfur hexafluoride as a gaseous dielectric (Brown), *STP 346*.
Gaskets. Report of Committee F-3, 512.
Gass, A. A., *see* Golder, H. Q., and Gass, A. A.
Gasvoda, R. F.: Test criteria for Ford passenger car rear axle lubricants, *STP 334*.
Gates, G. R., *see* Winslow, J. D. and Gates, G. R.
Gavan, F. M., *see* Sponseller, H. P. and Gavan, F. M.
Gay, E. J.: Introduction, *STP 334*.
Gaynor, R. D., *see* Wills, M. H., Jr., Lepper, H. A., Jr., Gaynor, R. D., and Walker, S.
George, Z., *see* Herrin, M., Manke, P. G., and George, Z.
Gerard, G., Papirno, R., and Becker, H.: On experimental solid dynamics, *STP 336*.

Germanium
 doping of germanium transistor surfaces by fluid-base encapsulant systems (Borofsky and Partridge), *STP 342*.
 effects of moisture after stress on electrical characteristics of germanium transistors (Partridge and Borofsky), *STP 342*.
 infrared-tested surface properties of semiconductor wafers (Bogenschuetz and Schuetze), *STP 342*.

Gewain, R. G. (discussion), *STP 344*.
 Gibbs, H. J., and Bara, J. P.: Predicting surface subsidence from basic soil tests, *STP 322*.
 Gibbs, T. W., *see* Kyros, W., Gibbs, T. W., and Theberge, C. L.
 Gillett Memorial Lecture: Trends in metallurgy of low-alloy, high-yield-strength steels (Austin), *issued as a separate publication*.
 Gilliland, J. L.: Significance of false set tests, 880; discussion, 929.
 Gillott, J. E.: Cell test method for study of alkali-carbonate rock reactivity, 1195.
 Gladstone, W. J. (discussion), *STP 320*.
 Glass, C. M., Golaski, S. K., Misey, J. J., and Moss, G. L.: Fracture of single crystals under explosive loading, *STP 336*.
 Glass, electronic, chemical durability evaluation (Wiens), *STP 342*.
 Glass fiber
 compression, fatigue, and stress studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.
 compression testing of NOL rings (Elkin), *STP 327*.
 compressive strength of parallel filament reinforced plastics (Fried and Winans), *STP 327*.
 corona detection techniques as a nondestructive method for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.
 creep cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.
 determining hoop stress in composite structures (Hanley and Cole), *STP 327*.
 determining percentage of resin flow in pre-impregnated roving (Rubin), *STP 327*.
 developing standards for use of preimpregnated roving (Leeds), *STP 327*.
 hoop tension tests for screening materials for filament winding applications (Dallas), *STP 327*.
 infrared nondestructive testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
 measurement of hoop tensile strength by means of an NOL type filament wound ring (Channon and Rubin), *STP 327*.
 methods for filament-wound specimens (Yurkens), *STP 327*.
 NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.
 nondestructive test techniques for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.
 nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.
 nondestructive tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.
 preparation and testing of NOL rings from pre-impregnated rovings (Brown and Davis), *STP 327*.
 properties and proposed digital code system for glass fiber reinforcements for filament winding (Perry), *STP 327*.
 quality control procedure for rocket motor cases: reinforced plastic versus steel (Duvall), *STP 327*.
 single end glass yarn tension test (Pirzadeh and Kennedy), *STP 327*.
 tension test method for glass fiber strands, yarns, and rovings (OCF strand test) (Hood), *STP 327*.
 use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.
 Glenn, R. C., and Raley, J. C.: Improved procedure for thinning metallic specimens for transmission electron microscopy, *STP 339*.
 Gobble, L. P., and Salmen, W. J.: Compressive properties of pyrolytic graphite from room temperature to 5000 F, *STP 345*.
 Godfrey, D.: Lubrication, *STP 340*.
 Goff, J. W.: Introduction, *STP 324*.
 Gohn, G. R.: Fatigue of metals: Part 1—mechanics of fatigue, *MR&S*, Feb., 106; (letter), May, 412; (discussion), *STP 338*.
 Golaski, S. K., *see* Glass, C. M., Golaski, S. K., Misey, J. J., and Moss, G. L.
 Gold, materials problems in electrical contacts (Keil), *MR&S*, June, 489.
 Goldberg, A. (discussion), *STP 344*.
 Golder, H. Q., and Gass, A. A.: Field tests for determining permeability of soil strata, *STP 322*.
 Goldman, E.: Two methods for the determination of nitrates in water, *STP 337*.
 Goldspiel, Solomon, Canner, Irving, and Ordonez, Jose: Study of film coatings with radioisotope-tagged electroless nickel substrates, *MR&S*, July, 562.
 Gould, J. P.: Control of construction dewatering by use of piezometers, *STP 322*.
 Graham, R. A., *see* Halpin, W. J., Jones, O. E., and Graham, R. A.
 Grain-size analysis, shortcut for (Ehrenburg), *MR&S*, Dec., 987.
 Grance, H. J.: Why high performance gear lubricants at service stations?, *STP 334*.
 Grant, N. J., *see* Cairns, R. E., Jr. and Grant, N. J.
 Graphite
 compressive properties of pyrolytic graphite from room temperature to 5000 F (Gobble and Salmen), *STP 345*.
 Report of Committee C-5, 264.
 Report of Committee C-6, 265.

Graves, F. L., and Loveless, H. S.: Convenient measurement of deflection temperature under load and Vicat softening point, *MR&S*, Jan., 33.

Gravity settling technique for measuring airborne dust in electron device processing areas (Selby), *STP 342*.

Gray, J. E. (discussion), *STP 320*.

Greases. Report of ALCA-ASTM Joint Committee on Leather, 443.

Green, W. R., *see* Truman, C. L., Bolt, C. C., and Green, W. R.

Greenfeld, S. H., *see* Newman, S. B. and Greenfeld, S. H.

Griffin, D. F., and Henry, R. L.: Effect of salt in concrete on compressive strength, water vapor transmission, and corrosion of reinforcing steel, 1046.

Griffin, E. J. (discussion), 734.

Griffin, R. L., Izatt, J. O., and Lettier, J. A.: Application of asphalt viscosity to paving problems, *STP 328*.

Griffith, J. M. (discussion), *STP 328*.

Griffith, J. M., and Puzinauskas, V. P.: Relation of empirical tests to fundamental viscosity of asphalt cement, *STP 328*.

Groble, K. K., *see* Hendron, J. A., Groble, K. K., Gruetzmacher, R. W., McClurg, G. O., and Retzky, M. W.

Grounes, M. (discussion), *STP 341*.

Grounes, M., and Myers, H. P.: Swedish studies on irradiation effects in structural materials, *STP 341*.

Grover, H. J. (discussion), *STP 338*.

Gruetzmacher, R. W., *see* Hendron, J. A., Groble, K. K., Gruetzmacher, R. W., McClurg, G. O., and Retzky, M. W.

Grunder, L. J. (discussion), *STP 334*.

Guenther, A. H.: Production of strong shocks in plastics by ultra-short impulsive loading, *STP 336*.

Gunn, K. M., *see* Clark, W. J., Gunn, K. M., and Talley, C. P.

Gurinsky, D. H., *see* Chow, J. G. Y., McRickard, S. B., and Gurinsky, D. H.

Gypsum control of false set by the use of anhydrite and gypsum blends (Sawyer), 918.

effect on 1-day strength of mortar (Kennedy), *MR&S*, July, 567.

Report of Committee C-11, 288.

setting and hardening of plaster (Hansen), *MR&S*, May, 359.

Gzemski, F. C.: Viscoelastic properties of paving asphalts, *STP 328*.

H

Hafnium. Report of Committee B-2, 163.

Hagan, M. A., and Martin, G.: Testing materials in a plasma arc under simulated re-entry conditions, *STP 345*.

Hall, C. A., and Martin, E. A.: Single-cylinder test techniques for engine oils—part one: CRC L-38 test work, *STP 334*.

Hall, E. R. (discussion), *MR&S*, Jan., 24.

Halogenated organic solvents. Report of Committee D-26, 435.

Halpin, J. E. (discussion), *STP 320*.

Halpin, W. J., Jones, O. E., and Graham, R. A.: Submicrosecond technique for simultaneous observation of input and propagated impact stresses, *STP 336*.

Halsey, N., *see* Mordfin, L., and Halsey, N.

Halstead, W. J.: Introduction, *STP 328*; *see also* Welborn, J. Y., Halstead, W. J., and Olsen R. E.

Ham, J. L., and Reichenbach, G. S.: Fatigue testing of aluminum in vacuum, *STP 345*.

Hamilton, J. J., *see* Bozozuk, M., Johnston, G. H., and Hamilton, J. J.

Handyside, J. R., *see* Steven, G. and Handyside, J. R.

Hanesian, D., *see* Coyner, E. C., and Hanesian, D.

Hanley, D. P., and Cole, C. K.: Segmented cylinder test for determining hoop stress in composite structures, *STP 327*.

Hanna, S. J. and McLaughlin, J. F.: Development of precision statements for several ASTM test methods, 1105.

Hansen, W. C.: Crystal growth as a source of expansion in portland-cement concrete, 932.

(discussion), 885.

Setting and hardening of gypsum plasters, *MR&S*, May, 359.

Harban, A. A. and McGlamery, R. M.: Limitations on measuring flow rates of polyethylene and ethylene copolymers by extrusion plasto-meter, *MR&S*, Nov., 906; *see also* McGlamery, R. M. and Harban, A. A.

Hardrath, H. F.: Fatigue of metals: Part 2—crack propagation and final failure, *MR&S*, Feb., 116.

Introduction, *STP 338*.

(discussion), *STP 338*.

Harlow, I. M. (discussion), *STP 334*.

Harper, D. L., Feilbach, W. H., and Libsch, J. F.: Application of induction heating to high-temperature fatigue testing, 684.

Harries, D. R. (discussion), *STP 341*; *see also* Nichols, R. W. and Harries, D. R.

Harries, D. R., Barton, P. J., and Wright, S. B.: Effects of neutron spectrum and dose rate on radiation hardening and embrittlement in steels, *STP 341*.

Harrington, L. C., and Rowe, G. H.: Thermal expansion of five titanium carbide cermets from 68 to 1800 F, 620.

Thermal expansion of thirteen tungsten carbide cermets from 68 to 1800 F, 633.

Harris, J. N., *see* Fleming, J. D., Boland, Paul, and Harris, J. N.

Harvey, E. D.: Nondestructive test techniques for filament-wound glass fiber-resin rocket motor cases, *STP 350*.

Haskell, E. E., Jr. *see* Bianchi, W. C. and Haskell, E. E., Jr.

Haslim, L. A., *see* Schmidt, W. F., Haslim, L. A., and McKellar, L. A.

Hastelloy, neutron irradiation effects (Robertshaw, Motteff, Kingsbury, and Pugacz), *STP 341*.

Hauser, F., *see* Rajnak, S., and Hauser, F.

Hawkinson, A. T., *see* Black, R. P. S., and Hawkinson, A. T.

Hawthorne, J. R.: Introduction, *STP 341*.

Heat of hydration of cement
application of heat-of-solution procedures (Newman and Berman), 852.
significance of tests (McCoy), 861.

Heat of solution. Calorimetry of portland cement (Berman and Newman):
I. effect of various procedures on determination of, 830
II. application of procedures to determination of heat of hydration, 852.

Heat softening-range tester for powdered samples (Doyle), *MR&S*, Nov., 915.

Heat treatment
mechanical properties of cold-drawn martensitic SAE 4340 steel rod (DiCesare), 517.
tuned *Q* analysis of quench and precipitation hardening of 4330M and 17-7PH steels (Hendrickson), *STP 345*.

Heating, electrical. Report of Committee B-4, 174.

Heels, flooring damage (discussion), *MR&S*, May, 379.

Heger, J. J. (discussion), *STP 345*.

Helicopter fatigue substantiation procedures for civil aircraft (Dougherty and Spieer), *STP 338*.

Henderson, R. P., and Matich, M. A. J.: Use of slope indicator to measure movements in earth slopes and bulkheads, *STP 322*.

Hendrickson, I. G.: Tuned *Q* analysis of quench and precipitation hardening of 4330M and 17-7PH steels, *STP 345*.

Hendron, J. A.: Nondestructive testing of high-strength steel rocket motor cases, *STP 350*; (discussion), *STP 327*.

Hendron, J. A., Groble, K. K., Gruetzmacher, R. W., McClurg, G. O., and Retzky, M. W.: Some nondestructive tests for filament-wound structures, *STP 327*.

Henrikson, E. K., Lieberman, I., Wilkin, J. F., and McPherson, W. B.: Metallurgical effect of explosive straining, *STP 336*.

Henry, E. F. (discussion), *STP 322*.

Henry, R. L., *see* Griffin, D. F., and Henry, R. L.

Herbenar, E. J., *see* Stucker, J. B., Toulmin, H. A., and Herbenar, E. J.

Herrin, M., Manke, P. G., and George, Z.: Evaluation of laboratory techniques of soaking soil-asphalt specimens, 1287.

Hertz, J. (discussion), *STP 345*.

Hexafluorethane and octafluorocyclobutane (Coyner and Hanesian), *STP 346*.

Hickey, C. F., Jr., and Larson, F. R.: Comparison of test specimens for notch sensitivity and fracture toughness of high-strength sheet materials, 780.

High-speed testing
behavior of filamentous materials subjected to high-speed tensile impact (Smith, Fenstermaker, and Shouse), *STP 336*.

compression testing of thermoplastics (Ely), *STP 336*.

dynamic plastic flow properties under uniform stress (Johnson, Stein, and Davis), *STP 336*.

experimental solid dynamics (Gerard, Papirno, and Becker), *STP 336*.

fracture of single crystals under explosive loading (Glass, Golaski, Misey, and Moss), *STP 336*.

impact performance of HT-1 and nylon webbings to Mach 0.7 (Coskren, Chu, and Morgan), *STP 336*.

low pressure spall thresholds in copper (Smith), *STP 336*.

mechanism of spall (Blincow and Keller), *STP 336*.

metallurgical effects of explosive straining (Henriksen, Lieberman, Wilkin, and McPherson), *STP 336*.

plastic impacts on short cylindrical specimens (Ripperger and Karnes), *STP 336*.

plastic wave propagation in rods (Rajnak and Hauser), *STP 336*.

residual temperatures of shock-loaded iron (McQueen, Zukas, and Marsh), *STP 336*.

round-robin testing of thermoplastics (Patterson, Jr.), *STP 336*.

strong shocks in plastics by ultra-short impulsive loading (Guenther), *STP 336*.

submicrosecond technique for simultaneous observation of input and propagated impact stresses (Halpin, Jones, and Graham), *STP 336*.

High temperature
aluminum sandwich panel fatigue test under Mach-2.4 cruising conditions (Buntin and Love), *STP 338*.

application of induction heating to high-temperature fatigue testing (Harper, Feilbach, and Libsch), 684.

ascent environment of spacecraft thermal control surfaces (Schmidt, Haslim, and McKellar), *STP 345*.

compressive properties of pyrolytic graphite from room temperature to 5000F (Gobble and Salmen), *STP 345*.

effect of neutron irradiation at 550 F on Charpy impact properties of ASTM A 302 grade B steel (Brandt and Alexander), *STP 341*.

effects of radiation on two low-alloy steels at elevated temperatures (Lowe), *STP 341*.

effect of stress state on high-temperature low-cycle fatigue (Kennedy), *STP 338*.

elevated-temperature behavior of annealed 70-30 copper-nickel (Donachie, Steele, and Shephard), 598.

high-temperature behavior of aluminous cement concretes containing different aggregates (Zoldner, Malhotra, and Wilson), 966.

quality control of high-temperature solid rocket control components (Ahearn), *STP 350*.

resistance heating facility for determination

of tensile properties of aircraft and missile alloys (Kyros, Gibbs, and Theberge), 1160.
testing materials in plasma arc under simulated re-entry conditions (Hagan and Martin), *STP 345*.

Hightchew, H. E.: Nonmetallic materials for supersonic transport, *MR&S*, Oct., 815.

Highway construction, subsidence of California highway (Cedergren and Weber), *STP 322*.

Highway materials. Report of Committee D-4, 348.

Hill, E. D. (discussion), *STP 320*.

Hilsen, R. R., Yen, C. S., and Whiteson, R. V.: Low-cycle fatigue of Ti-6Al-4V at -423 F, *STP 338*.

Hime, W. G. (discussion), 916.

Hinkle, N. E.: Effect of neutron bombardment on stress-rupture properties of some structural alloys, *STP 341*.

Hipkins, C. C.: Development of test for perspiration resistance, 325.

Hoak, R. D.: Thermal loading of streams, *STP 337*.

Hoch, F. R., *see* Kunkle, D. E. and Hoch, F. R.

Hoenig, S. A. and Creighton, D. L.: Observing crack growth with field emission microscope, *MR&S*, Nov., 899.

Hogg, C. H., and Weber, L. D.: Fast-neutron dosimetry at the MTR-ETR site, *STP 341*.

Hojo, H., *see* Suezawa, Y., Hojo, H., and Ikeda, T.

Holden, F. C., *see* Rudnick, A., Hunter, A. R., and Holden, F. C.

Holland, J. R. (discussion), *STP 336*.

Holmes, J. J., *see* Chockie, L. J., Holmes, J. J., and Tobin, J. C.

Holshouser, W. L. (discussion), *STP 338*.

Holtz, W. G.: Investigation and solution of landslide problem involving high transmission tower, *STP 322*.

Hood, J. C.: Tension test method for glass fiber strands, yarn, and rovings, *STP 327*.

Horowitz, Emanuel and Mandel, John: Determination of bitumen content in expansion joint fillers, *MR&S*, Sept., 723.

Horstmann, K. (discussion), *STP 338*.

Hose-stream test as fire-testing procedure (Ingborg), *STP 344*.

Hosking, J. S., and Hueber, H. V.: Dimensional changes due to moisture in bricks and brick-work, *STP 320*.

Houseknecht, T. M. (discussion), 916.

HT-1 webbing, impact performance (Coskren, Chu, and Morgan), *STP 336*.

Hueber, H. V., *see* Hosking, J. S., and Hueber, H. V.

Human factor in determining plastic limit of cohesive soils (Ballard and Weeks), *MR&S*, Sept., 726.

Humidity, weight change of membrane filter, (Cahn), *MR&S*, May, 377.

Hund, F. C.: Nondestructive testing of solid propellant missile motors, *STP 350*.

Hunstad, N. A.: General Motors rear axle lubricant recommendations, *STP 334*.

Hunter, A. R., *see* Rudnick, A., Hunter, A. R., and Holden, F. C.

Hurlich, A., *see* Christian, J. L., Hurlich, A., Chafey, J. E., and Watson, J. F.

Hydration

- application of heat-of-solution procedures to heat of hydration (Newman and Berman), 852.
- significance of tests for heat of hydration of cement (McCoy), 861.

Hydraulic conductivity of soil cores, rapid determination (Bianchi, and Haskell), 1227.

Hydraulic fluids. Report of Committee D-2, 332.

Hydrocarbons

- manual on hydrocarbon analysis, *STP 332*.
- physical constants of hydrocarbons C₁ to C₁₀, *STP 109-A*.

Report of Committee D-16, 399.

Hydrogen embrittlement due to electrolytic cadmium plating (Johnson), *STP 345*.

Hydrogen peroxide, electronic grade, use and handling of (Black and Hawkinson), *STP 342*.

I

Ikeda, T., *see* Suezawa, Y., Hojo, H., and Ikeda, T.

Impact testing

- behavior of filamentous materials subjected to high-speed tensile impact (Smith, Fenstermaker, and Shouse), *STP 336*.
- C-notch impact test for steels at high hardnesses (Steven and Handyside), 1122.
- a different way (Taraldsen), *MR&S*, July, 571.
- effect of neutron irradiation on Charpy impact properties of ASTM A 302 grade B steel (Brandt and Alexander), *STP 341*.
- impact performance of HT-1 and nylon webbings to Mach 0.7 (Coskren, Chu, and Morgan), *STP 336*.
- instrumented testing of thermoplastics (Kelly and Dunn), *MR&S*, July, 545.
- low pressure spall thresholds in copper (Smith), *STP 336*.
- mechanism of spall (Blincow and Keller), *STP 336*.
- metals at strain rates up to 200 sec (Smith), *MR&S*, Sept., 713.
- plastic impacts on short cylindrical specimens (Ripperger and Karnes), *STP 336*.
- production of strong shocks in plastics by ultra-short impulsive loading (Guenther), *STP 336*.
- radiation effects in reactor structural materials (Reynolds), *STP 341*.
- rail-car impact simulator (Patterson and Lantos), *STP 324*.
- residual temperatures of shock-loaded iron (McQueen, Zukas, and Marsh), *STP 336*.
- response of timber joints with metal fasteners to lateral impact loads (Jordan), *MR&S*, May, 368; (discussion), Nov., 914.
- submicrosecond technique for observation of propagated impact stresses (Halpin, Jones, and Graham), *STP 336*.
- subsize charpy impact specimens (Fahey and Kula), 1147.

Implants. Report of Committee F-4, 514.

Inconel
effect of neutron bombardment on stress-rupture properties of structural alloys (Hinkle), *STP 341*.
effect of stress state on high-temperature low-cycle fatigue (Kennedy), *STP 338*.

Indexing by machine (Kennedy), *MR&S*, Sept., 752.

Induction heating, application to high-temperature fatigue testing (Harper, Feilbach, and Libsch), 684.

Industrial water
analytical methods and instrumentation for determining cyanogen compounds (Lancy and Zabban), *STP 337*.
manual on industrial water and industrial waste water, *STP 148-F*.
water—raw material for utilities steam generation (Muller), *STP 337*.

Information retrieval, confidence factor in data retrieval (Waddington), *MR&S*, Sept., 739.

Infrared spectra
serial number list of compounds, names, and references, *STP 358*.
supplement to molecular formula list of compounds, names, and references, *STP 331-A*.

Infrared tests
nondestructive testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
surface properties of semiconductor wafers (Bogenschuetz and Schuetze), *STP 342*.

Ingberg, S. H.: Hose-stream test as part of fire-testing procedure, *STP 344*.

Insulating oils, corrosive sulfur in (Shomber), *MR&S*, April, 280.

Insulation. See Electrical insulation, and thermal insulating materials.

Interlaboratory tests
ASTM task group round-robin testing (Davis), *STP 327*.
corrosive sulfur in insulating oils (Shomber), *MR&S*, April, 280.
Report of Committee E-11, 485.
round-robin tests for ranking laboratories (Youden), *MR&S*, Jan., 9.
study of two ASTM distillation methods (discussion), *MR&S*, April, 722.

Ionized gas jet surface cleaner (Krieger), *STP 342*.

Iron
mechanical properties of irradiated iron and iron alloys (Chow, McRickard, and Gurinsky), *STP 341*.
neutron irradiated in alpha iron and 1Cr-0.5Mo pressure vessel steel (Eyre), *STP 341*.
residual temperatures of shock-loaded iron (McQueen, Zukas, and Marsh), *STP 336*.

Izatt, J. O., see Griffin, R. L., Izatt, J. O., and Lettier, J. A.

J

Jacobson, J., see Sussman, S., Portnoy, I. L., and Jacobson, J.

Jaffe, L. D. (discussion), *STP 340*.

Jain, G. S. and Kumar, Virendra: Calculations for separating skin friction and point-bearing in piles, *MR&S*, April, 290.

Jeffery, J. W. (discussion), *MR&S*, Jan., 36.

Jepson, K. S. (discussion), 827.

Jet fuel, for hot aircraft (Johnson), *MR&S*, April, 300.

Jet vanes, quality control of high-temperature solid rocket control components (Ahearn), *STP 350*.

Johnson, A. I. (discussion), *STP 322*.

Johnson, B. G.: Method of test for hydrogen embrittlement due to electrolytic cadmium plating, *STP 345*.

Johnson, C. E.: Analysis of strain gage measurements under transient heating conditions, *STP 345*.

Johnson, C. J.: Hot fuel for a hot aircraft, *MR&S*, April, 300.

Johnson, D. E. (discussion), *STP 341*.

Johnson, P. C., Stein, B. A., and Davis, R. S.: Measurement of dynamic plastic flow properties under uniform stress, *STP 336*.

Johnson, R. W., and Yoder, E. J.: Repeated-load triaxial test of soils with pore pressure measurement, 1207.

Johnston, G. H., see Bozozuk, M., Johnston, G. H., and Hamilton, J. J.

Jones, H. L. (discussion), *STP 327*.

Jones, J. R. (discussion), *STP 334*.

Jones, O. E., see Halpin, W. J., Jones, O. E., and Graham, R. A.

Jones, P. M.: Comparison of two spark-gap testers for asphalt films, *MR&S*, April, 293.

Jordan, C. A.: Need for better simulated service tests for packaging, *STP 324*.
Response of timber joints with metal fasteners to lateral impact loads, *MR&S*, May, 368; (discussion), Nov., 914.

K

Kabel, R. H., see Bennett, P. A., and Kabel, R. H.

Kampf, L.: Factors affecting bond of mortar to brick, *STP 320*.

Karnes, C. H., see Ripperger, E. A., and Karnes, C. H.

Karpe, S., see Prosen, S. P., Karpe, S., Kinna, M. A., Mueller, C., Perry, H. A., and Barnet, F. R.

Kattus, J. R., see Willhelm, A. C., and Kattus, J. R.

Kearney, T. J.: Solvent vapor degreasing as applied to missile containers, conduits, transports, and hardware, 1316.

Keil, A. G.: Some materials problems in electrical contacts, *MR&S*, June 489.

Keller, D. V., see Blincow, D. W., and Keller, D. V.

Kelly, P. P. and Dunn, T. J.: Instrumented tensile impact testing of thermoplastics, *MR&S*, July, 545.

Kennedy, C. R.: Effect of stress state on high-

temperature low-cycle fatigue, *STP 338*; (discussion), *STP 338*.

Kennedy, P. B., *see* Pirzadeh, N., and Kennedy, P. B.

Kennedy, R. A.: Indexing by machine, *MR&S*, Sept., 752.

Kennedy, T. B.: Effect of added gypsum on 1-day strength of mortar, *MR&S*, July, 567.

Kester, B. E.: Significance of tests for fineness, 866.

Ketler, A. E., Jr. (discussion), *STP 327*.

Kiefer, D. L., *see* Melton, C. W., Schwartz, C. M., and Kiefer, D. L.

Kindall, J. V. (discussion), *STP 345*.

Kingsbury, F. D., *see* Robertshaw, F. C., Motteff, J., Kingsbury, F. D., and Pugacz, M. A.

Kinna, M. A., *see* Prosen, S. P., Karpe, S., Kinna, M. A., Mueller, C., Perry, H. A., and Barnet, F. R.

Kinney, J. E.: Political puppet called purity, *STP 337*; *MR&S*, Jan., 37.

Kinzie, R. A., Jr. (discussion), *STP 322*.

Kircher, J. F., *see* Ritzman, R. L., Lieberman, R., Kircher, J. F., and Sunderman, D. N.

Kjelby, A. S., *see* Krusos, J. N., Kjelby, A. S., Borosic, J., and Eck, F. B.

Klein, A., and Bertero, V.: Effects of curing temperature and creep characteristics of expansive concrete, 1008.

Klepfel, H. H. (discussion), *STP 341*.

Klier, E. P., Muvdi, B. B., and Sachs, G.: Factors influencing tensile and notch-tensile properties of high-strength steels, 546.

Kondner, R. L. (discussion), *MR&S*, Sept., 736.

Kornhaas, R., *see* Bakish, R. and Kornhaas, R.

Kostoch, F. R.: Materials problems for supersonic transport, *MR&S*, Oct., 805.

Kramer, G., *see* Baily, N. A., and Kramer, G.

Kramer, H. G.: Evaluation of polycrystalline silicon batches for Czochralski crystal pulling, *STP 342*.

Kresge, J. S. (discussions), *STP 346*.

Krieger, G. L.: An ionized gas jet surface cleaner, *STP 342*.

Krock, R. H.: Effect of composition and dispersed-phase particle-size distribution on static elastic moduli of tungsten-copper composite materials, 605.

Kroksky, E. M., Tons, E., and Andrews, R. D.: Rheological properties of asphalt-aggregate compositions, 1263.

Krusos, J. N., Kjelby, A. S., Borosic, J., and Eck, F. B.: Fabrication and properties of beryllium-faced sandwich structures, *MR&S*, Oct., 825.

Kuennen, W. H. (discussion), *STP 320*.

Kula, E. B., *see* Antil, A. A., Kula, E. B., and DiCesare, E.; and Fahey, N. H. and Kula, E. B.

Kumar, Virendra, *see* Jain, G. S. and Kumar, Virendra.

Kunkle, D. E. and Hoch, F. R.: Proposed standard for eddy current inspection of aluminum alloy tube, *MR&S*, May, 353.

Kyros, W., Gibbs, T. W., and Theberge, C. L.: Resistance heating facility for determination of tensile properties of alloys for aircraft and missiles, 1160.

L

Laboratories, directory of testing laboratories, *STP 333*.

Lacquer

Report of Committee D-1, 318.

Report of Committee D-9, 373.

Laminates

compression, fatigue, and stress studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.

compression testing of NOL rings (Elkin), *STP 327*.

compressive strength of parallel filament reinforced plastics (Fried and Winans), *STP 327*.

corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.

craze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.

cylinder test for determining hoop stress in composite structures (Hanley and Cole), *STP 327*.

evaluation of high-strength and modulus brittle materials in filament and composite form (Clark, Gunn, and Talley), *STP 327*.

hoop tension tests for screening materials for filament winding applications (Dallas), *STP 327*.

key properties and digital code system for glass fiber reinforcements for filament winding (Perry), *STP 327*.

laboratory scale filament winding system to produce pressure vessels (Outwater), *STP 327*.

measurement of hoop tensile strength by means of NOL type filament wound ring (Channon and Rubin), *STP 327*.

NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.

nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.

nondestructive tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.

preparation and testing of NOL rings from pre-impregnated rovings (Brown and Davis), *STP 327*.

proximity probe for detection of moisture within a laminate (Outwater), *STP 327*.

quality control procedure for rocket motor cases (Duvall), *STP 327*.

research on wire-wound composite materials (McGarry and Marshall), *STP 327*.

standards for use of preimpregnated roving (Leeds), *STP 327*.

test for interlaminar shear properties of sizings and binders for secondary reinforcements using a polar-cut ovaloidal specimen (Perry), *STP 327*.

INDEX

Laminates (continued)

tests for filament-wound specimens (Yurenka), *STP 327*.

tests for parallel filament reinforced plastics (Fried), *STP 327*.

use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.

Laney, L. E., and Zabban, W.: Analytical methods and instrumentation for determining cyanogen compounds, *STP 337*.

Lander, L. L., and Carey, R. H.: Polyethylene—environmental stress rupture and blown bottles, *STP 324*.

Landerman, E.: Surveillance tests on structural materials in nuclear reactors, *STP 341*.

Landslides

correction of (Buckingham), *STP 322*.

cut slope design (Smith and Cedergren), *STP 322*.

investigation by seismic and electrical resistivity methods (Trantina), *STP 322*.

solution of landslide problem involving a high transmission tower (Holtz), *STP 322*.

Lantos, P. R., see Patterson, D., Jr., and Lantos, P. R.

Larson, F. R., see Hickey, C. F., and Larson, F. R.; and DeSisto, T. S., Carr, F. L., and Larson, F. R.

LaZerte, J. D., see Sargent, J. W., and LaZerte, J. D.

Leather. Report of ALCA-ASTM Joint Committee on Leather, 443.

Lee, Henry: Attaining equilibrium in water absorption tests of epoxy casting resins, *MR&S*, Nov., 910.

Leeds, M. A.: Developing standards for use of preimpregnated roving, *STP 327*; (discussion), *STP 327*.

Lemaire, J., see Cibois, E., Lemaire, J., and Weisz, M.

Leonards, G. A., see Bell, J. R., Leonards, G. A., and Dolch, W. L.

Lepper, H. A., Jr., see Wills, M. H., Jr., Lepper, H. A., Jr., Gaynor, R. D., and Walker, S.

Lerch, William (discussion), *MR&S*, Nov., 921.

Lettier, J. A., see Griffin, R. L., Izatt, J. O., and Lettier, J. A.

Leunis, R. R., see Nelson, R. C., Rhodes, R. H., and Leunis, R. R.

Levy, D. F.: Fundamental viscosity and how it is measured, *STP 328*.

Levy, R. C. (discussions), *STP 344*.

Lewis, G. I. (discussion), 827.

Leboldy, H. A., and Naumann, E. C.: Study of fatigue life under random loading, 717.

Liao, T. W., and Shombert, G. L., Jr.: Summary of round-robin tests of test cells for dielectric strength of gases, *STP 346*; (discussions), *STP 346*.

Libsch, J. F., see Harper, D. L., Feilbach, W. H., and Libsch, J. F.

Lieb, J. H. (discussion), *STP 327*.

Lieberman, I., see Henriksen, E. K., Lieberman, I., Wilkin, J. F., and McPherson, W. B.

Lieberman, R., see Ritzman, R. L., Lieberman, R., Kircher, J. F., and Sunderman, D. N.

Lignosulfonate additions in cement, ultraviolet spectrophotometry for determining (Wexler and Brako), *MR&S*, May, 364.

Lime. Report of Committee C-7, 266.

Lindsay, E. W., and Works, C. N.: Corona detection techniques as nondestructive method for locating voids in filament-wound structures, *STP 327*.

Liquefied petroleum gas

Report of Committee D-2, 332.

Report of Committee D-3, 345.

Liquids, electrical insulating. Report of Committee D-27, 437.

Litvak, S. (discussion), *STP 327*.

Load-bearing tests

for foundations of structures and pavements (Burmister), *STP 322*.

skin friction and point-bearing in piles (Jain and Kumar), *MR&S*, April, 290.

Logan, H. L., McBee, M. J., and Romanoff, Melvin: Stress-corrosion cracking of type 304 stainless steel at 455 to 615 F, *MR&S*, Aug., 635.

Lorman, W. R. (discussion), 1024.

Love, T. S., see Buntin, W. D., and Love, T. S. Loveless, H. S., see Graves, F. L. and Loveless, H. S.

Low-cycle fatigue

behavior of mild steel (Yao and Munse), *STP 338*.

characteristics of ultrahigh-strength steels (Carman, Armiento, and Markus), *STP 338*.

effect of mean stress on fatigue strength of plain and notched stainless steel sheet in the range from 10 to 10^7 cycles (Bell and Benham), *STP 338*.

effect of stress state (Kennedy), *STP 338*.

fatigue of Ti-6Al-4V at -423 F (Hilsen, Yen, and Whiteson), *STP 338*.

panel discussion, *STP 338*.

properties of complex welded joints of high-strength 301, 304L, 310, and AM-355 stainless steel sheet materials (Christian, Hurlich, and Watson), *STP 338*.

Low Temperature

effects of impurity elements and cold rolling on mechanical properties of titanium-5Al-2.5Sn alloy at room and cryogenic temperatures (Christian, Hurlich, Chafey, and Watson), 578.

effects of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K (Watson, Christian, and Allen), *STP 345*.

effects of production and fabrication variables on sharp notch properties of 5Al-2.5Sn titanium alloy sheet at liquid hydrogen temperature (Shannon and Brown), 809.

low-cycle fatigue of Ti-6Al-4V at -423 F (Hilsen, Yen, and Whiteson), *STP 338*.

low-cycle fatigue properties of complex welded joints of high-strength 301, 304L, 310, and AM-355 stainless steel sheet materials at

cryogenic temperatures (Christian, Hurlich, and Watson), *STP 338*.

Lowe, A. L., Jr.: Effects of radiation on two low-alloy steels at elevated temperatures, *STP 341*.

Lubricants

- 1962 status of test sequences I, II, and III (Bennett and Kabel), *STP 334*.
- axle and transmission lubricants (Towle), *STP 334*.
- chassis lubricants (Stucker, Toulmin, and Herbenar), *STP 334*.
- effect on automatic transmission clutch plate durability (Davison), *STP 334*.
- effect on bearing strength (discussion) *MR&S*, Jan., 13.
- engine-operating sequence V tests for MS oils in stop-and-go service (Potter), *STP 334*.
- engine test sequences for evaluating automotive lubricants for API service MS, *STP 315-A*.
- General Motors rear axle lubricant recommendations (Hunstad), *STP 334*.
- hot fuel for a hot aircraft (Johnson), *MR&S*, April, 300.
- lubrication (Godfrey), *STP 340*.
- lubrication of ball bearings for space applications (Clauss, Drake, and Young), *STP 345*.
- motor oils market in France and in Europe (Thiery), *STP 334*.
- performance of MIL-L-2105B gear oils in military equipment (Streets and Schwartz), *STP 334*.
- Report of Committee D-2, 332.
- single-cylinder test techniques for engine oils—part 1: CRC L-38 test work (Hall and Martin); part 2: development of CRC L-43 test technique (McLaughlin), *STP 334*.
- test criteria for Ford passenger car rear axle lubricants (Gasvoda), *STP 334*.
- test sequence IV for API service MS oils (Beckman and Fales), *STP 334*.
- where do we go from here in motor oil testing? (McReynolds), *STP 334*.
- why high performance gear lubricants at service stations? (Grance), *STP 334*.
- Lucite, mechanism of spall (Blincow and Keller), *STP 336*.
- Lug joints, effect of pin-interference and bolt torque on fatigue strength (Mittenbergs and Beall), 671.
- Lunar soil sampling and testing (Azmon), *STP 322*.
- Lunsford, L. R.: Shear test for adhesive bonds, *STP 345*.

M

Machine indexing (Kennedy), *MR&S*, Sept., 752.

Madden, H. H. (discussion), *STP 340*.

Magnesium and magnesium alloys

- Report of Committee B-3, 166.
- Report of Committee B-6, 184.
- Report of Committee B-7, 193.

Magnet wire. Report of Committee D-9, 373.

Magnetic particle tests of solid propellant missile motors (Hund), *STP 350*.

Magnetic properties. Report of Committee A-6, 144.

Makol, R. L., *see* Anand, H. N. and Makol, R. L.

Malhotra, V. M.: Predicting compressive strength from properties of fresh concrete, *MR&S*, June, 483; (discussions), 901, 1101; *see also* Zoldner, N. G., Malhotra, V. M., and Wilson, H. S.

Mandel, John, *see* Horowitz, Emanuel and Mandel, John.

Manke, P. G., *see* Herrin, M., Manke, P. G., and George, Z.

Manning, M. L.: Gaseous insulation—its importance and need for test methods, *STP 346*; (discussions), *STP 346*.

Manning, R. D. (discussion), *MR&S*, June, 486; *see also* Sheehan, J. P., and Manning, R. D.

Manning, R. E. (discussion), *STP 328*.

Manson, S. S. (discussion), 713.

Mansour, T. M.: Nondestructive method of measuring thickness of transparent coatings, *MR&S*, Jan., 29.

Marburg Lecture: Adhesives—past, present, and future (Blomquist), *issued as a separate publication*.

Marian, J. E.: Surface texture in relation to adhesive bonding, *STP 340*.

Marine exposure, effect on organic materials (Connolly), *MR&S*, March, 193.

Markus, H., *see* Carman, C. M., Armiento, D. F., and Markus, H.

Marsh, R. C.: Comparison of dust count data obtained from different measuring methods, *STP 342*.

Marsh, S., *see* McQueen, R. G., Zukas, E., and Marsh, S.

Marshall, D. W., *see* McGarry, F. J. and Marshall, D. W.

Martens, H. E., *see* Brothers, A. J., Martens, H. E., and Wood, H. L.

Martenson, J. A. (discussion), *STP 327*.

Martin, E. A., *see* Hall, C. A., and Martin, E. A.

Martin, G., *see* Hagan, M. A., and Martin, G.

Martin, T. (discussion), *STP 327*.

Mascis, R. J.: Numerical film reading techniques for interpretation of linear-propellant interface of solid rocket motors, *STP 350*.

Mashburn, J. C., *see* Whitefield, W. J., Mashburn, J. C., and Neitzel, W. E.

Masonry

- bond of mortar to brick (Kampf), *STP 320*.
- bond strength and resistance to moisture penetration of brick masonry (Ritchie and Davison), *STP 320*.
- dimensional changes due to moisture in bricks (Hosking and Hueber), *STP 320*.
- dimensional changes in relation to soundness of bricks and mortars (Ritchie), *STP 320*.
- effects of aggregate grading on properties of masonry mortar (Bloem), *STP 320*.
- rain penetration through masonry walls (Birkeland and Svendsen), *STP 320*.

Report of Committee C-12, 290.

Report of Committee C-15, 299.

INDEX

Masonry (*continued*)
 Report of Committee E-6, 475.
 testing high-bond clay masonry assemblages (Monk), *STP 320*.

Mass spectra, index of data, *STP 356*.

Mateos, M. (discussion), *STP 320*.

Materials sciences, dynamic behavior of materials, *MR&S*, Jan., 59.

Mather, B. (discussion), 929, 1101.

Mather, K. (discussion), 993.

Matich, M. A. J., *see* Henderson, R. P., and Matich, M. A. J.

Matsuoka, S., and Aloisio, C. J.: Investigation of dynamic mechanical properties of polyethylene, *STP 336*.

Mattek, L. J. (discussion), *MR&S*, Jan., 25; April, 289.

McBee, M. J., *see* Logan, H. L., McBee, M. J., and Romanoff, Melvin.

McClurg, G. O., *see* Gendron, J. A., Groble, K. K., Gruetzmacher, R. W., McClurg, G. O., and Retzky, M. W.

McCoy, P. E. (discussion), 1077.

McCoy, W. J.: Significance of tests for heat of hydration of cement, 861.

McGarry, F. J. (discussion), *STP 327*.

McGarry, F. J. and Marshall, D. W.: Research on wire-wound composite materials, *STP 327*.

McGaughy, F. J. (discussion), *STP 346*.

McGlamery, R. M. and Harban, A. A.: Two instruments for measuring low-shear viscosity of polymer melts, *MR&S*, Dec., 1003; *see also* Harban, A. A. and McGlamery, R. M.

McHugh, W. E. (discussion), *STP 341*.

McKellar, L. A., *see* Schmidt, W. F., Haslim, L. A., and McKellar, L. A.

McMaster, R. C., *see* Rhoten, M. L., and McMaster, R. C.

McLaughlin, E. J.: Single-cylinder test techniques for engine oils—part 2: development of CRC L-43 test techniques, *STP 334*.

McLaughlin, J. F., *see* Hanna, S. J. and McLaughlin, J. F.

McNicol, C. V. (discussion), 915.

McPherson, W. B., *see* Henriksen, E. K., Lieberman, I., Wilkin, J. F., McPherson, W. B.

McQueen, R. G., Zukas, E., and Marsh, S.: Residual temperatures of shock-loaded iron, *STP 336*.

McReynolds, L. A.: Where do we go from here in motor oil testing? *STP 334*.

McRickard, S. B., (discussion), *STP 341*; *see also* Chow, J. G. Y., McRickard, S. B., and Gurinsky, D. H.

Mechanical properties
 chromium—1 per cent columbium alloy (Cairns, and Grant), 566.
 cold-drawn martensitic SAE 4340 steel rod (DiCesare), 517.
 effects of impurity elements and cold rolling of titanium-5Al-2.5Sn alloy at room and cryogenic temperatures (Christian, Hurlach, Chafey, and Watson), 578.
 elevated-temperature behavior of annealed 70-30 copper-nickel (Donachie, Steele, and Sheppard), 598.

influence of section size of 7075-T6 aluminum, 6Al-6V-2Sn titanium, and AISI 4340 steel (DeSisto, Carr, and Larson), 768.
 welded high-strength titanium alloy sheet (Brothers, Martens, and Wood), 646.

Mehta, P. K. (discussion), 900.

Melton, C. W., Schwartz, C. M., and Kiefer, D. L.: Modified thinning technique for transmission electron microscopy, *STP 339*.

Merrill, D., *see* Cordon, W. A., and Merrill, D.

Merrill, J. H., *see* Gabrysh, A. F., Eyring, H., Bezirjian, O. H., and Merrill, J. H.

Messinger, H. (discussion), *STP 337*.

Metal powder parts. Report of Committee B-9, 240.

Metallic coatings. Report of Committee B-8, 212.

Metallography
 atomic displacements induced by radiation (Sosin), *STP 341*.
 comparison of replicas and thin sections of Ni-O-Nel (Pellier), *STP 339*.
 electron probe microanalysis (Philibert), *STP 339*.
 identification of phases in age-hardenable nickel-copper-aluminum-titanium alloy (Fragetta and Mihalisin), *STP 339*.
 interplanar spacing determination by 50-kv electron diffraction (Dorsey), *STP 339*.
 interpretation of electron diffraction patterns (Sturkey), *STP 339*.
 precision and accuracy in measurement of electron diffraction patterns (Beu), *STP 339*.
 radiation effects on diffusion-controlled reaction in alloys (Wechsler), *STP 341*.
 Report of Committee A-3, 125.

Report of Committee E-3, 462.

Report of Committee E-4, 470.

stress-strain characteristics under conditions of transient heating and loading (Willhelm and Kattus), 613.

thinning metallic specimens for transmission electron microscopy (Glenn and Raley), *STP 339*.
 transmission electron microscopy (Melton, Schwartz, and Kiefer), *STP 339*.

Methods of testing. Report of Committee E-1, 447.

Mica. Report of Committee D-9, 373.

Michaels, A. S.: Fundamentals of surface chemistry and surface physics, *STP 340*.

Microelectronics. Report of Committee F-1, 506.

Microscopy
 field emission microscope for observing crack growth (Hoenig and Creighton), *MR&S*, Nov., 899.
 projection X-ray, of roofing materials (Newmann and Greenfeld), *MR&S*, Nov., 893.
 Report of Committee E-1, 447.

Microstructure of etched aluminum foils (Bakish and Kornhaas), *MR&S*, Aug., 640.

Mihalisin, J. R.: Introduction, *STP 339*; *see also* Fragetta, W. A. and Mihalisin, J. R.

Miller, D. F. (discussion), *STP 334*.

Miller, D. R. (discussion), *STP 341*.

Mills, W. W., Jr.: Planning nondestructive test-

ing program for solid propellant rocket motors, *STP 350*.
Millson, J. O. (discussion), *MR&S*, Jan., 13.
Mineral oils. Report of Committee D-27, 437.
Misey, J. J., *see* Glass, C. M., Golaski, S. K.,
Misey, J. J., and Moss, G. L.
Missiles and rockets
cinefluorography of solid fuel rocket motors
(Criscuolo and Polansky), *STP 350*.
gamma scintillation scanning for inspecting
solid rocket motors (Underhill), *STP 350*.
infrared nondestructive testing of glass fila-
ment-wound rocket motor cases (Alzofon,
Florant, Ronald, Vann, and Fitzgerald),
STP 350.
nondestructive testing of high-strength steel
rocket motors cases (Hendron), *STP 350*.
nondestructive testing of solid propellant mis-
sile motors (Hund), *STP 350*.
nondestructive testing program for solid
propellant rocket motors (Mills), *STP 350*.
nondestructive tests for filament-wound glass
fiber-resin rocket motor cases (Harvey),
STP 350.
numerical film reading techniques for inter-
pretation of linear-propellant interface of
solid rocket motors (Mascis), *STP 350*.
quality control of high-temperature solid
rocket control components (Ahearn), *STP
350*.
service tests of steels for missile motor cases
(discussion), *MR&S*, June, 485.
Mittenbergs, A. A.
(discussion), 690.
Empirical analysis of fatigue strength of pin-
loaded lug joints, *STP 338*.
Mittenbergs, A. A., and Beall, L. G., Jr.: Effect
of pin-interference and bolt torque on fatigue
strength of lug joints, 671.
Moisture
dimensional changes in bricks and brickwork
(Hosking and Hueber), *STP 320*.
effects after stress on electrical characteristics
of germanium transistors (Partridge and
Borofsky), *STP 342*.
moisture content of hardened concrete by its
dielectric properties (Bell, Leonards, and
Dolch), 996.
portable proximity probe for detection of
moisture within a laminate (Outwater) *STP
327*.
resistance to moisture penetration of brick
masonry (Ritchie and Davison), *STP 320*.
water introduced into electron tubes (Frost),
STP 342.
Molecular spectroscopy. Report of Committee
E-13, 488.
Molybdenum. Report of Committee B-2, 163.
Monk, C. B., Jr.: Testing high-bond clay ma-
sonry assemblages, *STP 320*.
Moore, C. C.: Summary, *STP 334*.
Moore, G. A.: Survey of factors controlling de-
sign of automatic systems for quantitative
analysis of micrographs, *MR&S*, June, 1025.
Moore, R. F. (discussion), *STP 322*.
Mordfin, L., and Halsey, N.: Programmed
maneuver spectrum fatigue tests of aircraft
beam specimens, *STP 338*.
Morgan, H. M., *see* Coskren, R. J., Chu, C. C.,
and Morgan, H. M.
Morrill, E. E., Jr., Blankenhorn, J. M., and
Woolrich, P. F.: Health hazard factors in op-
eration of metal degreasing tanks, 1303.
Mortar
bond of mortar to brick (Kampf), *STP 320*.
bond strength and resistance to moisture
penetration of brick masonry (Ritchie and
Davison), *STP 320*.
chemical resistant. Report of Committee C-3,
259.
dimensional changes in relation to soundness
of bricks and mortars (Ritchie), *STP 320*.
effects of aggregate grading on properties of
masonry mortar (Bloem), *STP 320*.
high-bond clay masonry assemblages (Monk),
STP 320.
masonry. Report of Committee C-12, 290.
Moss, G. L., *see* Glass, C. M., Golaski, S. K.,
Misey, J. J., and Moss, G. L.
Moteff, J., *see* Robertshaw, F. C., Moteff, J.,
Kingsbury, F. D., and Pugacz, M. A.
Moughalian, A. P. (discussion), *MR&S*, May,
357.
Mueller, C., *see* Prosen, S. P., Karpe, S., Kinna,
M. A., Mueller, C., Perry, H. A., and Barnet,
F. R.
Mulhall, V. R.: Introduction, *STP 346*.
Mullen test. Report of ALCA-ASTM Joint Com-
mittee on Leather, 443.
Muller, A. C.: Water—raw material for utilities
steam generation, *STP 337*.
Muller, E. W.: Field ion microscopy of surface
structures on an atomic scale, *STP 340*.
Munse, W. H., (discussion), *STP 338*; *see also*
Yao, J. T. P., and Munse, W. H.
Murr, W. E., *see* Shober, F. R., and Murr, W. E.
Muvdi, B. B., *see* Klier, E. P., Muvdi, B. B., and
Sachs, G.
Myer, J. H. (discussion), *STP 342*.
Myers, H. P., *see* Grounes, M., and Myers, H. P.
Myers, N. C. (discussion), *STP 327*.

N

Naumann, E. C., *see* Leybold, H. A., and Naun-
mann, E. C.
Naval stores. Report of Committee D-17, 405.
Neitzel, W. E., *see* Whitfield, W. J., Mash-
burn, J. C., and Neitzel, W. E.
Nelson, R. C., Rhodes, R. H., and Leunis, R. R.:
Apparatus for determining bend ductility
of sheet between -196 and 300 C, *MR&S*,
April, 296.
Nemerow, N. L., *see* Brennan, P. J. and Neme-
row, N. L.
Neuman, R. V. (discussion), 915.
Neutron dosimetry
at MTR-ETR site (Hogg and Weber), *STP
341*.
for long-term irradiations (Ritzman, Lieber-
man, Kircher, and Sunderman), *STP 341*.
use of semiconductor lithium drifted p-i-n
junction detectors for dosimetry (Baily and
Kramer), *STP 341*.

Newland, G. C., Schulken, R. M., Jr., and Tamblyn, J. W.: Optimum mounting angle for outdoor weathering of plastics, *MR&S*, June, 487.

Newman, E. S., *see* Berman, H. A., and Newman, E. S.

Newman, E. S., and Berman, H. A.: Calorimetry of portland cement—II: Application of various heat-of-solution procedures to determination of heat of hydration, 852.

Newman, H. V. (discussion), *STP 340*.

Newman, S. B. and Greenfeld, S. H.: Projection X-ray microscopy of roofing materials, *MR&S*, Nov., 893.

Nichols, R. (discussion), *STP 341*.

Nichols, R. W., and Harries, D. R.: Brittle fracture and irradiation effects in ferritic pressure vessel steels, *STP 341*.

Nickel and nickel alloys

- effect of neutron bombardment on stress-rupture properties of some structural alloys (Hinkle), *STP 341*.
- effect of neutron irradiation on precipitation hardening alloys (Cupp), *STP 341*.
- fatigue properties of age-hardenable alloys (Wolff and Dodd), *MR&S*, Sept., 734.
- identification of phases in age-hardenable nickel-copper-aluminum-titanium alloy (Fragetta and Mihalisin), *STP 339*.
- replicas and thin sections of Ni-O-Nel (Pellier), *STP 339*.
- Report of Committee B-2, 163.
- Report of Committee F-1, 506.

Nickel-chromium. Report of Committee B-8, 212.

Nitrates, determination of, in water (Goldman), *STP 337*.

Nitrogen, round-robin tests of test cells for dielectric strength of gases (Liao and Shomber), *STP 346*.

Nomenclature. Report of Committee E-8, 480.

Nondestructive tests

- cinefluorography of solid fuel rocket motors (Criscuolo and Polansky), *STP 350*.
- corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.
- gamma scintillation scanning for inspecting solid rocket motors (Underhill), *STP 350*.
- infrared testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
- numerical film reading for interpretation of liner-propellant interface of solid rocket motors (Mascis), *STP 350*.

Report of Committee E-7, 477.

techniques for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.

television x-ray image enlargement system of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.

testing high-strength steel rocket motor cases (Hendron), *STP 350*.

testing program for solid propellant rocket motors (Mills), *STP 350*.

testing solid propellant missile motors (Hund), *STP 350*.

tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.

Nonferrous metals. Report of Committee B-3, 166.

Nonparametric analysis, interlaboratory tests for corrosive sulfur in insulating oils (Shomber), *MR&S*, April, 280.

Notch effect

- notch-tensile properties of high-strength steels (Klier, Muvdi, and Sachs), 546.
- sharp notch properties of 5Al-2.5Sn titanium alloy sheet at liquid hydrogen temperature (Shannon and Brown), 809.

Notch sensitivity and fracture toughness of high-strength sheet materials (Hickey and Larson), 780.

Nuclear fuels. Report of Committee C-21, 309.

Nuclear graphite. Report of Committee C-5, 264.

Nuclear radiation. Report of Committee D-9, 373.

Nunes, John: Flow stress-strain relationships in tension tests of steel, *MR&S*, Sept., 719.

Nylon webbing, impact performance (Coskren, Chu, and Morgan), *STP 336*.

O

Oakford, R. V., *see* Moss, L. E., and Oakford, R. V.

Oceanography, engineering properties of ocean floor soils (Smith), *STP 322*.

Octafluorocyclobutane, electrical insulating gases (Coyner and Hanesian), *STP 346*.

Odor testing. Report of Committee E-18, 497.

Oil

- 1962 status of test sequences I, II, and III (Bennett and Kabel), *STP 334*.
- improvements in engine-operating sequence V tests for MS oils in stop-and-go service (Potter), *STP 334*.
- motor oils market in France and in Europe (Thiery), *STP 334*.
- performance of MIL-L-2105B gear oils in military equipment (Streets and Schwartz), *STP 334*.
- single-cylinder test techniques for engine oils—part 1: CRC L-38 test work (Hall and Martin); part 2: development of CRC L-43 test technique (McLaughlin), *STP 334*.
- test sequence IV for API service MS oils (Beckman and Fales), *STP 334*.
- test sequences for evaluating automotive lubricants for API service MS, *STP 315-A*.
- where do we go from here in motor oil testing? (McReynolds), *STP 334*.

O'Leary, L. A. and Fink, W. L.: Introduction, *STP 340*.

Oliver, F. S. (discussion), *STP 346*.

Olsen, R. E., *see* Welborn, J. Y., Halstead, W. J., and Olsen, R. E.

Operator variance, human factor in determining plastic limit of cohesive soils, (Ballard and Weeks), *MR&S*, Sept., 726.

Ordonez, Jose, *see* Goldspiel, Solomon; Canner, Irving; and Ordonez, Jose.

Organic materials, effect of marine exposure on (Connolly), *MR&S*, March, 193.

Oscillators, characteristics for satellite environments (Spence and Reynolds), *STP 342*.

Outwater, J. O.: Laboratory scale filament winding system to produce pressure vessels rapidly and simply, *STP 327*; Portable proximity probe for detection of moisture within a laminate, *STP 327*.

Oxidation

- correlation of composition with durability and rheology of asphalts (Traxler), 1235.
- effect on stability of thermocouples (Starr and Wang), 1185.

Oxidation resistance of a chromium—1 per cent columbium alloy (Cairns and Grant), 566.

Ozone. Report of Committee D-22, 430.

P

Packaging

- mechanics of package cushioning (Crede), *STP 324*.
- polyethylene—environmental stress rupture and blown bottles (Lander and Carey), *STP 324*.
- rail-car impact simulator (Patterson and Lantos), *STP 324*.
- Report of Committee D-10, 379.
- Report of Committee F-2, 511.
- simulated service tests (Jordan), *STP 324*.

Paint. Report of Committee D-1, 318.

Palmgren-Miner rule, estimation of fatigue performance of aircraft structures (Schijve), *STP 338*.

Panzer, J. (discussion), *STP 334*.

Paper and paper products

- characteristics, nomenclature, and significance of tests, *STP 60-B*.
- Report of Committee D-6, 359.

Papirno, R., *see* Gerard, G., Papirno, R., and Becker, H.

Particle count

- dust count data obtained from different measuring methods (Marsh), *STP 342*.
- gravity-settling technique for measuring airborne dust in electron device processing areas (Selby), *STP 342*.
- enumeration of airborne particulate matter by scattered light technique (Pudvin), *STP 342*.
- silting index: evaluation of micron and sub-micron contamination in liquids (Dwyer), *STP 342*.
- sizing and counting airborne particulate contamination (Cotton and Williamsen), *STP 342*.

Particle size, significance of tests for fineness (Kester), 866.

Particulates

- Report of Committee D-22, 430.
- Report of Committee F-1, 506.

Partridge, J., *see* Borofsky, A. J., and Partridge, J.

Partridge, J., and Borofsky, A. J.: Both reversible and permanent effects of moisture after stress on electrical characteristics of germanium transistors, *STP 342*.

Patterson, D., Jr., and Lantos, P. R.: Rail-car impact simulator, *STP 324*.

Patterson, G. D., Jr.: Second report on round-robin testing of thermoplastics, *STP 336*.

Paving, application of asphalt viscosity (Griffin, Izatt, and Lettier), *STP 328*.

Pearce, N. S. (discussion), *STP 344*.

Pearson, B. A. (discussion), *STP 334*.

Pellier, L.: Comparison of replicas and thin sections of Ni-O-Nel, *STP 339*.

Pendleberry, S. L. (discussion), *MR&S*, June, 485; Sept., 739.

Penetrometer study of in situ strength of clays (discussion), *MR&S*, Sept., 736.

Penetrometers, radiographic, correlation of, (Criscuolo), *MR&S*, June, 465.

Pepper, William, Jr.: ASTM's analytical data projects, *MR&S*, Aug., 646.

Periodicals, coden for titles, *STP 329*.

Permafrost, deep bench marks in clay and permafrost areas (Bozozuk, Johnston, and Hamilton), *STP 322*.

Permeability of soil strata, determining (Golder and Gass), *STP 322*.

Perry, H. A.:

- Introduction, *STP 327*.
- Key properties and proposed digital code system for glass fiber reinforcements for filament winding, *STP 327*.

Proposed method of test for interlaminar shear properties of sizings and binders for secondary reinforcements using polar-cut ovaloidal specimen, *STP 327*.

Use of lead glass fiber yarns as tracers in radiography of filament-wound products, *STP 327*.

See also Prosen, S. P., Karpe, S., Kinna, M. A., Mueller, C., Perry, H. A., and Barnet, F. R.

Perspiration resistance

- discussion of test for (Hipkins), 325.
- comments on (Tour), 328.

Perspiration test. Report of ALCA-ASTM Joint Committee on Leather, 443.

Peters, C. C., and Eickner, H. W.: Surface flammability as determined by the FPL 8-ft tunnel method, *STP 344*.

Peterson, R. E.:

- Fatigue of metals: Part 3—engineering and design data, *MR&S*, Feb., 122.
- (discussion), *STP 338*.

Petroleum products

- manual on hydrocarbon analysis, *STP 332*.
- physical constants of hydrocarbons C₁ to C₁₀, *STP 109A*.

Report of Committee D-2, 332.

Pfleiderer, F. R., *see* Roskos, T. G. and Pfleiderer, F. R.

Pflug, H. D., and Crumpton, C. F.: Analysis of sodium in concrete by fluorescence photometry, *MR&S*, July, 556.

Philibert, J.: Electron probe microanalysis: new method of calculating absorption correction, *STP 339*.

Philleo, R. E. (discussion), 993.

Phillips, J. (discussion), *STP 327*.

Photoelastic studies of filament-wound pressure vessels (Eshbaugh) *STP 327*.

Photoetching, photography and metal parts production (Spears), *STP 342*.

Pigments. Report of Committee D-1, 318.

Piles

- load tests and their evaluation (Fletcher), *STP 322*.
- separating skin friction and point-bearing in piles (Jain and Kumar), *MR&S*, April, 290.

Pinned joints

- bearing strengths of aluminum and magnesium alloys (discussion), *MR&S*, Jan., 13.
- effect of pin-interference and bolt torque on fatigue strength of lug joints (Mittenbergs and Beall), 671.
- empirical analysis of fatigue strength of pin-loaded lug joints, (Mittenbergs), *STP 338*.

Pinned tensile specimens, design of, (Shinopoulos), *MR&S*, April, 297.

Pipe

- clay, report of Committee C-4, 263.
- concrete, report of Committee C-13, 292.
- NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.

Pirzadeh, N., and Kennedy, P. B.: Single end glass yarn tension test, *STP 327*.

Plasma arc, testing under simulated re-entry conditions (Hagan and Martin), *STP 345*.

Plastic adhesives. Report of Committee D-14, 393.

Plastic flow

- measurement of dynamic plastic flow properties under uniform stress (Johnson, Stein, and Davis), *STP 336*.
- suppression of Bauschinger effect and changes in flow pattern of ductile metals caused by cyclic torsional strains (Polakowski), 535.

Plastic limit of cohesive soils, human factor in determining, (Ballard and Weeks), *MR&S*, Sept., 726.

Plastic wave propagation

- plastic impacts on short cylindrical specimens (Ripperger and Karnes), *STP 336*.
- plastic wave propagation in rods (Rajnak and Hauser), *STP 336*.

Plastics

- compression, fatigue, and stress studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.
- compression testing of NOL rings (Elkin), *STP 327*.
- compressive strength of parallel filament reinforced plastics, (Fried and Winans), *STP 327*.
- corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.
- eraze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.
- determining percentage of resin flow in pre-impregnated roving (Rubin), *STP 327*.
- dilatometry for measurement of unrestrained shrinkage on resin curing (Rosen and Fornof), *STP 327*.
- dynamic mechanical properties of polyethylene (Matsuoka and Aloisio), *STP 336*.
- environmental stress-cracking of polyethylene, (Suzawa, Hojo, and Ikeda), *MR&S*, July, 550.
- flow rates of polyethylene and ethylene copolymers by extrusion plastometer, (Harban and McGlamery), *MR&S*, Nov., 906.
- high-speed compression testing of thermoplastics (Ely), *STP 336*.
- hoop tension tests for screening materials for filament winding applications (Dallas), *STP 327*.
- infrared nondestructive testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
- instrumented tensile impact testing of thermoplastics, (Kelly and Dunn), *MR&S*, July, 545.
- interlaminar shear properties of sizings and binders for secondary reinforcements using a polar-cut ovaloidal specimen (Perry), *STP 327*.
- key properties and digital code system for glass fiber reinforcements for filament winding (Perry), *STP 327*.
- low-shear viscosity of polymer melts, (McGlamery and Harban), *MR&S*, Dec., 1003.
- marine exposure of organic materials, (Connolly), *MR&S*, March, 193.
- measurement of hoop tensile strength by means of NOL type filament wound ring (Channon and Rubin), *STP 327*.
- NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.
- nondestructive test techniques for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.
- nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.
- nondestructive tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.
- optimum mounting angle for outdoor weathering of plastics, (Newland, Schulken, and Tamblyn), *MR&S*, June, 487.
- polyethylene—environmental stress rupture and blown bottles (Lander and Carey), *STP 324*.
- portable proximity probe for detection of moisture within a laminate (Outwater), *STP 327*.
- preparation and testing of NOL rings from pre-impregnated rovings (Brown and Davis), *STP 327*.
- quality control procedure for rocket motor cases, (Duvall), *STP 327*.
- Report of Committee D-9, 373

Report of Committee D-20, 417.
research on wire-wound composite materials (McGarry and Marshall), *STP 327*.
round-robin testing of thermoplastics (Patterson), *STP 336*.
segmented cylinder test for determining hoop stress in composite structures (Hanley and Cole), *STP 327*.
softening-range tester for powdered samples, (Doyle), *MR&S*, Nov., 915.
standards for use of preimpregnated roving (Leeds), *STP 327*.
strong shocks in plastics by ultra-short impulsive loading (Guenther), *STP 336*.
testing laminates for cigarette-burn resistance, (Rusch), *MR&S*, April, 273.
tests for filament-wound specimens (Yurenka), *STP 327*.
tests for parallel filament reinforced plastics (Fried), *STP 327*.
use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.
water absorption tests of epoxy casting resins, (Lee), *MR&S*, Nov., 910.
Plastometer, extrusion, for measuring flow rates of polyethylene and ethylene copolymers, (Harban and McGlamery), *MR&S*, Nov., 906.
Plating, test for hydrogen embrittlement due to electrolytic cadmium plating (Johnson), *STP 345*.
Plywood. Report of Committee D-7, 363.
Point-bearing and skin friction in piles, (Jain and Kumar), *MR&S*, April, 290.
Poisson's ratio,
method for determining, (Crow), *MR&S*, April, 996.
new methods to determine elastic constant, (Durelli and Ferrer), *MR&S*, Dec., 988.
Polakowski, N. H.: Suppression of Bauschinger effect and changes in flow pattern of ductile metals caused by cyclic torsional strains, 535.
Polansky, D., *see* Criscuolo, E. L., and Polansky, D.
Pollution, water. The political puppet called purity (Kinney), *STP 337*; *MR&S*, Jan., 37.
Polyethylene
dynamic mechanical properties (Matsuoka and Aloisio), *STP 336*.
environmental stress-cracking, (Suezawa, Hojo, and Ikeda), *MR&S*, July, 550.
environmental stress rupture and blown bottles (Lander and Carey), *STP 324*.
high-speed compression testing of thermoplastics (Ely), *STP 336*.
low-shear viscosity of polymer melts, (McGlamery and Harban), *MR&S*, Dec., 1003.
measuring flow rates by extrusion plastometer, (Harban and McGlamery), *MR&S*, Nov., 903.
Porcelain enamel. Report of Committee C-22, 312.
Pore-fluid pressure
control of construction dewatering by use of piezometers (Gould), *STP 322*.
development and installation of piezometers for measurement of pore-fluid pressures in earth dams (Daehn), *STP 322*.
repeated-load triaxial test of soils with pore pressure measurement (Johnson and Yoder), 1207.
Porosity measurements by air displacement, (Fleming, Boland, and Harris), *MR&S*, Jan., 20; (discussion), Aug., 643.
Portland cement
calorimetry of portland cement: I—effect of various procedures on determination of heat of solution (Berman and Newman), 830; II—application of various heat-of-solution procedures to determination of heat of hydration (Newman and Berman), 852.
control of false set by use of anhydrite and gypsum blends (Sawyer), 918.
significance of false set tests (Gilliland), 880.
significance of tests for heat of hydration of cement (McCoy), 861.
significance of tests for fineness (Kester), 866.
Portnoy, I. L., *see* Sussman, S., Portnoy, I. L., and Jacobsen, J.
Posniak, B. (discussion), *STP 327*.
Potter, R. I.: Improvements in the engine-operating sequence V tests for MS oils in stop-and-go service, *STP 334*; (discussion), *STP 334*.
Powder metallurgy. Report of Committee B-9, 240.
Powell, H. E. (discussion), *STP 342*.
Pozzolans. Report of Committee C-9, 270.
Precipitation-hardening alloys
effect of neutron irradiation (Cupp), *STP 341*.
tuned Q analysis of quench and precipitation hardening of 4330M and 17-7PH steels (Hendrickson), *STP 345*.
Precision statements for ASTM methods, development of (Hanna and McLaughlin), 1105.
Preservatives, wood. Report of Committee D-7, 363.
Pressure cell, strain gage, for rapid determination of hydraulic conductivity of soil cores (Bianchi and Haskell), 1227.
Pressure vessels
brittle fracture and irradiation effects in ferritic pressure vessel steels (Nichols and Harries), *STP 341*.
craze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.
laboratory scale filament winding system to produce pressure vessels rapidly and simply (Outwater), *STP 327*.
nondestructive tests for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.
photoelastic studies (Eshbaugh) *STP 327*.
Prestressing, cyclic, influence on fatigue limit (Brown and Work), 706.
Price, W. H. (discussions), 1024, 1077.
Programmed fatigue testing under random loading (Leybold and Naumann), 717.
Prosen, S. P. (discussion), *STP 327*.

Prosen, S. P.; Karpe, S; Kinna, M. A.; Mueller, C.; Perry, H. A.; and Barnet, F. R.: Compression, fatigue, and stress studies on NOL ring specimens, *STP 327*.

Psychophysical testing. Report of Committee E-18, 497.

Pudvin, J. F.: Enumeration of airborne particulate matter by the scattered light technique, *STP 342*.

Pugacz, M. A., *see* Robertshaw, F. C., Motteff, J., Kingsbury, F. D., and Pugacz, M. A.

Pulos, J. G. (discussion), *STP 327*.

Purity of water, the political puppet (Kennedy), *MR&S*, Jan., 37.

Puzinauskas, V. P., *see* Griffith, J. M., and Puzinauskas, V. P.

Pyrolytic graphite, compressive properties from room temperature to 5000 F (Gobble and Salmen), *STP 345*.

Pyrolytic materials. Report of Committee C-6, 265.

Q

Quality control

- gamma scintillation scanning for inspecting solid rocket motors (Underhill), *STP 350*.
- high-temperature solid rocket control components (Ahearn), *STP 350*.
- procedure for rocket motor cases (Duvall), *STP 327*.
- quality of observations (discussion), *MR&S*, June, 488.

Report of Committee E-11, 485.

Quench temper, tuned Q analysis of quench and precipitation hardening of 4330M and 17-7PH steels (Hendrickson), *STP 345*.

R

Radiant-panel test for surface flammability measurements (Robertson), *STP 344*.

Radiation

- decay products of radium in ceramics (Gabrysh, Eryring, Bezinjian, and Merrill), *MR&S*, Nov., 902.
- report of Committee D-22, 430.
- stability of ASTM A 302 grade B pressure-vessel steel, effect of stress on (Reynolds), *MR&S*, Aug., 644.

Radiation dosimetry

- fast-neutron dosimetry at the MTR-ETH site (Hogg and Weber), *STP 341*.
- fast neutron dosimetry for long-term irradiations (Ritzman, Lieberman, Kircher, and Sunderman) *STP 341*.
- use of semiconductor lithium drifted p-i-n junction detectors for dosimetry (Baily and Kramer), *STP 341*.

Radiation effects

- atomic displacements induced by radiation (Sosin), *STP 341*.
- brittle fracture and irradiation effects in ferritic pressure vessel steels (Nichols and Harries), *STP 341*.
- effect of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K (Watson, Christian, and Allen), *STP 345*.
- effect of neutron bombardment on stress-rupture properties of structural alloys (Hinkle), *STP 341*.
- effect of neutron irradiation at 550 F on Charpy impact properties of ASTM A 302 grade B steel (Brandt and Alexander), *STP 341*.
- effects of neutron irradiation on precipitation hardening alloys (Cupp), *STP 341*.
- effects of neutron spectrum and dose rate on radiation hardening and embrittlement in steels (Harries, Barton, and Wright), *STP 341*.
- effects of radiation on two low-alloy steels at elevated temperatures (Lowe), *STP 341*.
- in-reactor creep measurements on zircaloy-2 (Chockie, Holmes, and Tobin), *STP 341*.
- irradiation embrittlement and hardening of steels and zircaloy-2 in pressurized components (Cibois, Lemaire, and Weisz), *STP 341*.
- lubrication of ball bearings for space applications (Clauss, Drake, and Young), *STP 345*.
- mechanical properties of irradiated iron and iron alloys (Chow, McRickard, and Gurinsky), *STP 341*.
- neutron irradiation effects in A-286, Hastelloy X, and René 41 alloys (Robertshaw, Motteff, Kingsbury, and Pugacz), *STP 341*.
- neutron irradiation in alpha iron and 1Cr-0.5Mo pressure vessel steel (Eyre), *STP 341*.
- radiation effects on diffusion-controlled reaction in alloys (Wechsler), *STP 341*.
- radiation-induced property changes in AISI type 347 stainless steel (Shober and Murr), *STP 341*.
- reactor structural materials (Reynolds), *STP 341*.
- Report of Committee E-10, 483.
- significance of neutron spectrum on radiation effect studies (Rossin), *STP 341*.
- structure of displacement cascades produced by neutron irradiation (Van Lint), *STP 341*.
- surveillance tests on structural materials in nuclear reactors (Landerman), *STP 341*.
- Swedish studies on irradiation effects in structural materials (Grounes and Myers), *STP 341*.

Radiography

- cinefluorography of solid fuel rocket motors (Criscuolo and Polansky), *STP 350*.
- correlation of flaws with tensile properties of stainless steel castings (discussion), *MR&S*, Jan., 24; April, 289.
- correlation of radiographic penetrometers (Criscuolo), *MR&S*, June, 465.
- film coatings with radioisotope-tagged electroless nickel substrates (Goldspiel, Canner, and Ordonez), *MR&S*, July, 562.
- nondestructive testing of solid propellant missile motors (Hund), *STP 350*.
- numerical film reading techniques for interpretation of liner-propellant interface of solid rocket motors (Mascis), *STP 350*.

Report of Committee E-7, 477.

television x-ray image enlargement system for nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.
use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.

Radioisotopes. Report of Committee E-10, 483.

Radium, decay products in ceramics (Gabrysh, Eyring, Bezirjian, and Merrill), *MR&S*, Nov., 902.

Rail-car impact simulator (Patterson and Lantos), *STP 324*.

Rain penetration through masonry walls (Birkeland and Svendsen), *STP 320*.

Rajnak, S., and Hauser, F.: Plastic wave propagation in rods, *STP 336*.

Raley, J. C., *see* Glenn, R. C., and Raley, J. C.

Ramsey, R. B., Jr.: Vapor degreasing with trichlorotrifluoroethane, 1324.

Random loading, a study of fatigue life (Leybold and Naumann), 1324.

Random from ceramics (Gabrysh, Eyring, Bezirjian, and Merrill), *MR&S*, Nov., 902.

Raring, R. H.: Materials for wings and fuselage for supersonic transport, *MR&S*, Oct., 810.

Rate-of-solution apparatus (Budd), *MR&S*, May, 363.

Rawe, R. A.: Craze cracking in glass filament-wound pressure chambers, *STP 327*.

Refractories. Report of Committee C-8, 268.

Refractory metal sheet, determining bend ductility of sheet between -196 and 300°C (Nelson, Rhodes, and Leunis), *MR&S*, April, 296.

Rehydration, effect of soil rehydration on Atterberg limits (Winslow and Gates), *MR&S*, March, 205.

Reichenbach, G. S., *see* Ham, J. L., and Reichenbach, G. S.

Reichman, E. J. (discussion), *STP 344*.

Reid, R. W. (discussion), *STP 327*.

Reinforced plastics

- ASTM task group round-robin testing (Davis), *STP 327*.
- compression, fatigue, and stress studies on NOL ring specimens (Prosen, Karpe, Kinna, Mueller, Perry, and Barnet), *STP 327*.
- compression testing of NOL rings (Elkin), *STP 327*.
- compressive strength of parallel filament reinforced plastics (Fried and Winans), *STP 327*.
- corona detection techniques for locating voids in filament-wound structures (Lindsay and Works), *STP 327*.
- craze cracking in glass filament-wound pressure chambers (Rawe), *STP 327*.
- determining percentage of resin flow in preimpregnated roving (Rubin), *STP 327*.
- hoop tension tests for screening materials for filament winding applications (Dallas), *STP 327*.
- infrared testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.
- interlaminar shear properties of sizings and binders for secondary reinforcements using a polar-cut ovaloidal specimen (Perry), *STP 327*.

key properties and proposed digital code system for glass fiber reinforcements for filament winding (Perry), *STP 327*.

laboratory scale filament winding system to produce pressure vessels (Outwater), *STP 327*.

measurement of hoop tensile strength by means of an NOL type filament wound ring (Channon and Rubin), *STP 327*.

moisture within a laminate (Outwater), *STP 327*.

NOL ring test for selecting finished glass fibers for reinforcement of epoxy pipe (Roskos and Pfleiderer), *STP 327*.

nondestructive tests for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.

nondestructive tests for filament-wound structures (Hendron, Groble, Gruetzmacher, McClurg, and Retzky), *STP 327*.

photoelastic studies of filament-wound pressure vessels (Eshbaugh), *STP 327*.

preparation and testing of NOL rings from preimpregnated rovings (Brown and Davis), *STP 327*.

quality control procedure for rocket motor cases: reinforced plastic versus steel (Duvall), *STP 327*.

research on wire-wound composite materials (McGarry and Marshall), *STP 327*.

segmented cylinder test for determining hoop stress in composite structures (Hanley and Cole), *STP 327*.

single end glass yarn tension test (Pirzadeh and Kennedy), *STP 327*.

standards for use of preimpregnated roving (Leeds), *STP 327*.

television x-ray image enlargement system for fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.

tension test for glass fiber strands, yarns, and rovings (Hood), *STP 327*.

tests for filament-wound specimens (Yurenka), *STP 327*.

tests for parallel filament reinforced plastics (Fried), *STP 327*.

use of lead glass fiber yarns as tracers in radiography of filament-wound products (Perry), *STP 327*.

René 41 alloy, neutron irradiation effects (Robertshaw, Moteff, Kingsbury, and Pugacz), *STP 341*.

Resins

- dilatometry for measurement of unrestrained shrinkage on resin curing (Rosen and Fornof), *STP 327*.
- percentage of resin flow in preimpregnated roving (Rubin), *STP 327*.

Reti, G. A. (discussion), *STP 322*.

Retzky, M. W., *see* Hendron, J. A., Groble, K. K., Gruetzmacher, R. W., McClurg, G. O., and Retzky, M. W.

Reynolds, M. B.
Effect of stress on radiation stability of ASTM A 302 grade B pressure-vessel steel, *MR&S*, Aug., 644.

Radiation effects in reactor structural materials, *STP 341*.

Reynolds, R. L., *see* Spencer, W. J., and Reynolds, R. L.

Rheology
correlation of composition with durability and rheology of asphalts (Traxler), 1235.

properties of asphalt-aggregate compositions (Krokosky, Tons, and Andrews), 1263.

viscoelastic properties of paving asphalts (Gzemski), *STP 328*.

Rhodes, R. H., *see* Nelson, R. C., Rhodes, R. H., and Leunis, R. R.

Rhoten, M. L., and McMaster, R. C.: Television x-ray image enlargement system for nondestructive testing of fiber glass reinforced plastic missile case materials, *STP 327*.

Rich, C. E., *see* Trace, C. K., White, J. M., and Rich, C. E.

Richardson, R. L. (discussion), *STP 340*.

Ring and ball method, statistical comparison with softening point method (Fink), *MR&S*, Jan., 14.

Ripperger, E. A., and Karnes, C. H.: Plastic impacts on short cylindrical specimens, *STP 336*.

Ritchie, T.: Dimensional changes of masonry in relation to soundness of bricks and mortars, *STP 320*.

Ritchie, T., and Davison, J. I.: Factors affecting bond strength and resistance to moisture penetration of brick masonry, *STP 320*.

Ritzman, R. L., Lieberman, R., Kircher, J. F., and Sunderman, D. N.: Fast neutron dosimetry for long-term irradiations, *STP 341*.

Road and paving materials. Report of Committee D-4, 348.

Roberts, D. V., and Darragh, R. D.: Areal fill settlements and building foundation behavior at the San Francisco Airport, *STP 322*.

Robertshaw, F. C., Motteff, J., Kingsbury, F. D., and Pugacz, M. A.: Neutron irradiation effects in A-286, Hastelloy X, and René 41 alloys, *STP 341*.

Robertson, A. F.: Surface flammability measurements by the radiant-panel method, *STP 344*.

Robertson, W. D.: Needed: architects of matter, *MR&S*, Oct., 832.

Robson, T. D. (discussion), 993.

Rocket control components, quality control of (Ahearn), *STP 350*.

Rocket motors
cinefluorography of solid fuel rocket motors (Criscuolo and Polansky), *STP 350*.

gamma scintillation scanning for inspecting solid rocket motors (Underhill), *STP 350*.

nondestructive testing of solid propellant missile motors (Hund), *STP 350*.

numerical film reading techniques for interpretation of liner-propellant interface of solid rocket motors (Mascis), *STP 350*.

planning a nondestructive testing program for solid propellant rocket motors (Mills), *STP 350*.

Rocket motor cases
infrared nondestructive testing of glass filament-wound rocket motor cases (Alzofon, Florant, Ronald, Vann, and Fitzgerald), *STP 350*.

nondestructive testing of high-strength steel rocket motor cases (Hendron), *STP 350*.

nondestructive tests for filament-wound glass fiber-resin rocket motor cases (Harvey), *STP 350*.

quality control for rocket motor cases: reinforced plastic versus steel (Duvall) *STP 327*.

Rolston, J. A. (discussion), *STP 327*.

Romanoff, Melvin, *see* Logan, H. L., McBee, M. J., and Romanoff, Melvin.

Ronald, R. K., *see* Alzofon, F. E., Florant, L. E., Ronald, R. K., Vann, M. J., and Fitzgerald, J. E.

Roofing materials,
projection X-ray microscopy (Newman and Greenfeld), *MR&S*, Nov., 893.

Report of Committee D-8, 371.

Rosato, N. (discussion), *STP 327*.

Rose, A. S.: Evaluation of semiconductor epitaxial layers, *STP 342*.

Rosen, B. and Fornof, A. E.: Absolute and differential dilatometry for measurement of unrestrained shrinkage on resin curing, *STP 327*.

Rosenfeld, M. S.: Aircraft structural fatigue research in the Navy, *STP 338*.

Roskos, T. G. and Pfleiderer, F. R.: The NOL ring test as a method for selecting finished glass fibers for reinforcement of epoxy pipe, *STP 327*.

Rossin, A. D.: Significance of neutron spectrum on radiation effects studies, *STP 341*.

Rostler, F. S. (discussion), 1244.

Roth, A. (discussion), *MR&S*, Sept., 738.

Round-robin tests. *See* Interlaboratory tests

Rowe, G. H., *see* Harrington, L. C., and Rowe, G. H.

Rubber. Report of Committee D-11, 381.

Rubber reinforcement. Report of Committee D-24, 434.

Rubin, L.: Proposed method for determining percentage of resin flow in preimpregnated roving, *STP 327*; *see also* Channon, S. L. and Rubin, L.

Rudnick, A., Hunter, A. R., and Holden, F. C.: Analysis of diametral-compression test, *MR&S*, April, 283.

Rugger, G. R. (discussion), *STP 327*.

Rusch, K. C.: Testing decorative plastics laminates for cigarette-burn resistance, *MR&S*, April, 273.

Ryan, J. V. (discussion), *STP 344*.

S

Sachs, G., *see* Klier, E. P., Muvdi, B. B., and Sachs, G.

Salmen, W. J., *see* Gobble, L. P., and Salmen, W. J.

Salt, effect in concrete on compressive strength, water vapor transmission, and corrosion of reinforcing steel (Griffin and Henry), 1046.

Sampling
granular material (Truman, Bolt, and Green), *MR&S*, May, 378.

Report of Committee D-22, 430.

Sampson, R. N. (discussion), *STP 327*.

Sandwich panel fatigue test under Mach-2.4 cruising conditions (Buntin and Love), *STP 338*.

Sandwich structures, beryllium-faced (Krusos, Kjelby, Borosic, and Eck), *MR&S*, Oct., 825.

Santucci, L. E., *see* Schmidt, R. J., and Santucci, L. E.

Sargent, J. W., and LaZerte, J. D.: Fluorocarbon gases and volatile liquids, *STP 346*.

Sarpkaya, Turgut: Waterproofing electrical resistance strain gages, *MR&S*, April, 279.

Satellite environments, frequency control devices for (Spencer and Reynolds), *STP 342*.

Sawyer, J. L.: Control of false set by the use of anhydrite and gypsum blends, 918.

Schijve, J.: Estimation of fatigue performance of aircraft structures, *STP 338*; (discussion), *STP 338*.

Schlabaach, T. D. (discussion), *STP 327*.

Schlockner, J. (discussion), *STP 322*.

Schmid, W. E. (discussion), *STP 322*.

Schmidt, R. J., and Santucci, L. E.: A falling plunger viscometer for determining asphalt viscosity at low temperatures, 1248.

Schmidt, W. F., Haslim, L. A., and McKellar, L. A.: Effects of the ascent environment on spacecraft thermal control surfaces, *STP 345*.

Schuette, E. H. (discussion), *STP 338*.

Schuetze, H. J., *see* Bogenschuetz, A. F. and Schuetze, H. J.

Schulken, R. M., Jr., *see* Newland, G. C.

Schulken, R. M., Jr., and Tamblyn, J. W.

Schwartz, C. M., *see* Melton, C. W., Schwartz, C. M., and Kiefer, D. L.

Schwarz, C. F., *see* Streets, R. E., and Schwarz, C. F.

Schweyer, H. E. (discussion), 1262.

Scintillation scanning, gamma, for inspecting solid rocket motors (Underhill), *STP 350*.

Scott, F. S. (discussion), 1262.

Scott, R. F. (discussion), *MR&S*, Sept., 736.

Sealants, joint. Report of Committee C-24, 314.

Sealing alloys. Report of Committee F-1, 506.

Sears, R. M.: Fundamentals of thermostat metals, *MR&S*, Dec., 981.

Selby, E. E.: Review of gravity-settling technique for measuring airborne dust in electron device processing areas, *STP 342*.

Seligmann, P. (discussion), 929.

Selvaggio, S. L., and Carlson, C. C.: Effect of restraint on fire resistance of prestressed concrete, *STP 344*.

Semiconductors
evaluation of epitaxial layers (Rose), *STP 342*.
evaluation of polycrystalline silicon batches for Czochralski crystal pulling (Kramer), *STP 342*.

infrared-tested surface properties of semiconductor wafers (Bogenschuetz and Schuetze), *STP 342*.

instrument for contactless measurement of minority carrier lifetime (Currin and Smith), *STP 342*.

modular dopant for silicon Czochralski crystals (Smith and Currin), *STP 342*.

properties of single crystals of aluminum antimonide (Burns and Telk), *STP 342*.

Report of Committee F-1, 506.

Sensory testing. Report of Committee E-18, 497.

Settlements, areal fill at San Francisco Airport (Roberts and Darragh), *STP 322*.

Sewage disposal, field percolation tests for sanitary engineering application (Bendixen), *STP 322*.

Sewer pipe
clay. Report of Committee C-4, 263.
concrete. Report of Committee C-13, 292.

Shannon, J. L., Jr. and Brown, W. F., Jr.: Effect of several production and fabrication variables on sharp notch properties of 5Al-2.5Sn titanium alloy sheet at liquid hydrogen temperature, 809.

Shear test for adhesive bonds (Lunsford), *STP 345*.

Sheard, R. C.: Fuels and lubricants for supersonic transport, *MR&S*, Oct., 820.

Sheehan, J. P., and Manning, R. D.: Effect of decarburization on fracture toughness of an ultrahigh-strength sheet steel, *STP 345*.

Sheet materials
technique for making shallow cracks (discussion), *MR&S*, Sept., 738.

wings and fuselage for supersonic transport (Raring), *MR&S*, Oct., 810.

Sheffert, P. C. *see* Varma, M. M. and Sheffert, P. C.

Shepherd, R. G., *see* Donachie, M. J., Jr., Steele, R. K., and Shepherd, R. G.

Shinopoulos, G. F.: Design of flat low-ductility test specimens, *MR&S*, April, 297.

Shober, F. R., and Murr, W. E.: Radiation-induced property changes in AISI type 347 stainless steel, *STP 341*.

Shock-loaded iron, residual temperatures of (McQueen, Zukas, and Marsh), *STP 336*.

Shombert, G. L., Jr., *see* Liao, T. W., and Shombert, G. L., Jr. (Discussion), *STP 346*.

Shombert, George: Corrosive sulfur in insulating oils, *MR&S*, April, 280.

Shouse, P. J., *see* Smith, J. C., Fenstermaker, C. A., and Shouse, P. J.

Shrinkage on resin curing, dilatometry for measurement of (Rosen and Fornof), *STP 327*.

Silica analysis of continuous automatic boiler water (Allen), *STP 337*.

Silicon
evaluation of polycrystalline silicon batches for Czochralski crystal pulling (Kramer), *STP 342*.
infrared-tested surface properties of semiconductor wafers (Bogenschuetz and Schuetze), *STP 342*.

Silicon (*continued*)
 modular dopant for silicon Czochralski crystals (Smith and Currin), *STP 342*.
 Silting index, an evaluation of micron and sub-micron contamination in liquids (Dwyer), *STP 342*.

Silver
 fatigue properties of age-hardened alloys (Wolff and Dodd), *MR&S*, Sept., 734.
 materials problems in electrical contacts (Keil), *MR&S*, June, 489.
 Report of Committee B-2, 163.

Simon, S. S. (discussion), *STP 327*.

Sims, C. T. (discussion), 576.

Simulated service tests
 better tests for packaging (Jordan), *STP 324*.
 maintaining constant loads on elastically failing structures (Ward and Ely), *MR&S*, Sept., 730.
 rail-car impact simulator (Patterson and Lantos), *STP 324*.

Size effect, influence on mechanical properties and fracture toughness of 7075-T6 aluminum, 6Al-6V-2Sn titanium, and AISI 4340 steel (DeSisto, Carr, and Larson), 768.

Skid resistance. Report of Committee E-17, 496.

Skin friction and point-bearing in piles (Jain and Kumar), *MR&S*, April, 290.

Slack, K. V. (discussion), *STP 337*.

Slope indicators
 to determine movements in earth masses (Wilson), *STP 322*.
 to measure movements in earth slopes and bulkheads (Henderson and Matieh), *STP 322*.

Smallwood, J. E.: Effect of temperature on ultrasonic cavitation of fluorinated solvents, *STP 342*.

Smith, C. R.: Small specimen data for predicting life of full-scale structures, *STP 338*; (discussion), *STP 338*.

Smith, C. R., and Currin, C. G.: Modular dopant for silicon Czochralski crystals, *STP 342*.

Smith, C. S.: Four outstanding researches in metallurgical history (1963 Lecture on Outstanding Research) issued as a separate publication.

Smith, F. A., see Currin, C. G., and Smith F. A.

Smith, J. C., Fenstermaker, C. A., and Shouse, P. J.: Behavior of filamentous materials subjected to high-speed tensile impact, *STP 336*.

Smith, J. E.: Tension testing of metals at strain rates up to 200 sec⁻¹, *MR&S*, Sept., 713.

Smith, J. H.: Three low pressure spall thresholds in copper, *STP 336*.

Smith, P., and Chojnacki, B.: Accelerated strength testing of concrete cylinders, 1079.

Smith, R. (discussion), *STP 322*.

Smith, R. J.: Engineering properties of ocean floor soils, *STP 322*.

Smith, T. W., and Cedergren, H. R.: Cut slope design and landslides, *STP 322*.

Smith, V. C. (discussion), *STP 342*; *see also* Balbaugh, S., and Smith, V. C.

Soaps. Report of Committee D-12, 385.

Sodium analysis in concrete by fluorescence photometry (Pflug and Crumpton), *MR&S*, July, 556.

Softening point measurement of (Graves and Loveless), *MR&S*, Jan., 33.

softening-range tester for powdered samples (Doyle), *MR&S*, Nov., 915.

statistical comparison with ASTM ring and ball method (Fink), *MR&S*, Jan., 14.

Soils
 area fill settlements and building foundation behavior at the San Francisco Airport (Roberts and Darragh), *STP 322*.
 bearing capacity (Anand and Makol), *MR&S*, March, 201.
 cohesive, human factor in determining plastic limit (Ballard and Weeks), *MR&S*, Sept., 726.
 control of construction dewatering by use of piezometers (Gould), *STP 322*.
 cut slope design and landslides (Smith and Cedergren), *STP 322*.
 deep bench marks in clay and permafrost areas (Bozozuk, Johnston, and Hamilton), *STP 322*.
 effect of rehydration on Atterberg limits (Winslow and Gates), *MR&S*, March, 205.
 engineering properties of ocean floor soils (Smith), *STP 322*.
 field percolation tests for sanitary engineering application (Bendixen), *STP 322*.
 field tests for determining permeability of soil strata (Golder and Gass), *STP 322*.
 foundation problems related to ground surface subsidence in Mexico City (Zeevaert), *STP 322*.
 hydraulic conductivity of soil cores (Bianchi and Haskell), 1227.
 investigation and correction of landslides (Buckingham), *STP 322*.
 investigation and solution of a landslide problem involving a high transmission tower (Holtz), *STP 322*.
 investigation of landslides by seismic and electrical resistivity methods (Trantina), *STP 322*.
 laboratory techniques of soaking soil-asphalt specimens (Herrin, Manke, and George), 1287.
 lunar soil sampling and testing (Azmon), *STP 322*.
 penetrometer study of in situ strength of clays (discussion), *MR&S*, Sept., 736.
 physical stress-strain, and strength responses of granular soils (Burmister), *STP 322*.
 piezometers for measurement of pore-fluid pressures in earth dams (Daehn), *STP 322*.
 pile load tests and their evaluation (Fletcher), *STP 322*.
 predicting surface subsidence from basic soil tests (Gibbs and Bara), *STP 322*.
 prototype load-bearing tests for foundations of structures and pavements (Burmister), *STP 322*.
 Report of Committee D-18, 406.
 subsidence of California highways (Cedergren and Weber), *STP 322*.

triaxial test of soils with pore pressure measurement (Johnson and Yoder), 1207.
use of slope indicator to measure movements in earth slopes and bulkheads (Henderson and Matich), *STP 322*.
use of slope measuring devices to determine movements in earth masses (Wilson), *STP 322*.
Solid dynamics, experimental (Gerard, Papirno, and Becker), *STP 336*.
Solid propellants
cinefluorography of solid fuel rocket motors (Criscuolo and Polansky), *STP 350*.
nondestructive testing of missile motors (Hund), *STP 350*.
nondestructive testing program for rocket motors (Mills), *STP 350*.
numerical film reading techniques for interpretation of liner-propellant interface of solid rocket motors (Mascis), *STP 350*.
Solvents
effect of temperature on resistance of ultra-pure organic solvents (Balsbaugh and Smith), *STP 342*.
effect of temperature on ultrasonic cavitation of fluorinated solvents (Smallwood), *STP 342*.
health hazard factors in operation of metal degreasing tanks (Morrill, Blankenhorn, and Woolrich), 1303.
Report of Committee D-26, 435.
vapor degreasing as applied to missile containers, conduits, transports, and hardware (Kearney), 1316.
vapor degreasing with trichlorotrifluoroethane (Ramsey), 1324.
Sommerman, G. M. L. (discussions), *STP 346*.
Sonic cleaning
evaluating systems (Farris), *STP 342*.
role of cavitation (Bulat), *STP 342*.
Sonnino, C. B. (discussion), *STP 327*.
Sosin, A.: Mechanisms of atomic displacements induced by radiation, *STP 341*.
Soxhlet extraction, bitumen content in expansion joint fillers (Horowitz and Mandel), *MR&S*, Sept., 723.
Space environment
effects of ascent environment on spacecraft thermal control surfaces (Schmidt, Haslim, and McKellar), *STP 345*.
lubrication of ball bearings for space applications (Clauss, Drake, and Young), *STP 345*.
Report of Committee E-21, 503.
testing materials in a plasma are under simulated re-entry conditions (Hagan and Martin), *STP 345*.
Spalling
fracture of single crystals under explosive loading (Glass, Golaski, Misey, and Moss), *STP 336*.
low pressure spall thresholds in copper (Smith), *STP 336*.
mechanism of spall (Blineow and Keller), *STP 336*.
Spark-gap tester for asphalt films (Jones), *MR&S*, April, 293.
Spear, D. R.: Photography and metal parts production, *STP 342*.
Specifications do not control processes (Wescott), *MR&S*, March, 210.
Specimen design, flat low-ductility tensile specimens (Shinopoulos), *MR&S*, April, 297.
Spectrophotometry, ultraviolet, for determining lignosulfonate additions in cement (Wexler and Brako), *MR&S*, May, 364.
Spectroscopy
index of mass spectral data, *STP 356*.
molecular formula list of compounds, names, and references to published infrared spectra, *STP 331-A*.
molecular formula list of compounds, names, and references to published ultraviolet and visible spectra, *STP 357*.
Report of Committee E-2, 456.
Report of Committee E-13, 488.
serial number list of compounds, names, and references to published infrared spectra, *STP 358*.
use of X-ray emission spectroscopy in chemical analysis of cement, raw materials, and raw mix (Brown), 904.
Spellman, L. U. (discussion), 916.
Spencer, W. J. (discussion), *STP 340*.
Spencer, W. J., and Reynolds, R. L.: Characteristics of frequency control devices for satellite environments, *STP 342*.
Spicer, H. C., Jr., *see* Dougherty, J. E., and Spicer, H. C., Jr.
Sponseller, H. P., and Gavan, F. M.: Machine for measuring dynamic friction, *MR&S*, Dec., 992.
Sprague, S. R., and Woodruff, R. L.: Factory service automatic transmission fluid requirements, *STP 334*.
Srawley, J. E. (discussion), 797.
Stainless steel
correlation of flaws with tensile properties of castings (discussion), *MR&S*, Jan., 24; April, 289.
effect of mean stress on fatigue strength of sheet in the range from 10 to 10^7 cycles (Bell and Benham), *STP 338*.
effect of neutron bombardment on stress-rupture properties of some structural alloys (Hinkle), *STP 341*.
effect of nuclear radiation on tensile properties of high-strength materials at 20K and 294 K (Watson, Christian, and Allen), *STP 345*.
low-cycle fatigue properties of complex welded joints of sheet materials at cryogenic temperatures (Christian, Hurlach, and Watson), *STP 338*.
metallurgical effect of explosive straining (Henriksen, Lieberman, Wilkin, and McPherson), *STP 336*.
radiation effects in reactor structural materials (Reynolds), *STP 341*.
radiation-induced property changes in AISI type 347 stainless steel (Shober and Murr), *STP 341*.
Report of Committee A-10, 146.
Standing, S. A.: Introduction, *STP 342*.

INDEX

Starr, C. D., and Wang, T. P.: Effect of oxidation on stability of thermocouples, 1185.

Statistical methods
corrosive sulfur in insulating oils (Shombert), *MR&S*, April, 280.

development of precision statements (Hanna and McLaughlin), 1105.

evaluation of fatigue test specimens including a factor of safety approach (Albrecht), *STP 338*.

quality of observations (discussion), *MR&S*, June, 488.

ranking laboratories by round-robin tests (Youden), *MR&S*, Jan., 9.

Report of Committee E-11, 485.

Report of Committee E-15, 491.

specifications do not control processes (Westcott), *MR&S*, March, 210.

Steam generation
continuous automatic boiler water silica analysis (Allen), *STP 337*.

water—raw material for utilities steam generation (Muller), *STP 337*.

Steel
brittle fracture and irradiation effects in ferritic pressure vessel steels (Nichols and Harries), *STP 341*.

C-notch impact test at high hardnesses (Steven and Handyside), 1122.

comparison of test specimens for notch sensitivity and fracture toughness (Hickey, and Larson), 780.

effect of decarburization on fracture toughness of ultrahigh-strength sheet steel (Sheehan and Manning), *STP 345*.

effect of mean stress on fatigue strength of stainless steel sheet in the range from 10 to 10^7 cycles (Bell and Benham), *STP 338*.

effect of neutron bombardment on stress-rupture properties of structural alloys (Hinkle), *STP 341*.

effect of neutron irradiation at 550 F on Charpy impact properties of ASTM A 302 grade B steel (Brandt and Alexander), *STP 341*.

effects of neutron spectrum and dose rate on radiation hardening and embrittlement (Harries, Barton, and Wright), *STP 341*.

effect of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K (Watson, Christian, and Allen), *STP 345*.

effects of radiation on low-alloy steels at elevated temperatures (Lowe), *STP 341*.

effect of salt in concrete on compressive strength, water vapor transmission, and corrosion of reinforcing steel (Griffin and Henry), 1046.

effect of stress on radiation stability of ASTM A 302 grade B pressure-vessel steel (Reynolds), *MR&S*, Aug., 644.

electric potential technique for determining slow crack growth (Anctil, Kula, and DiCesare), 799.

flow-stress-strain relationships in tension tests (Nunes), *MR&S*, Sept., 719.

hydrogen embrittlement due to electrolytic cadmium plating (Johnson), *STP 345*.

influence of cyclic prestressing on fatigue limit (Brown and Work), 706.

influence of section size on mechanical properties and fracture toughness of AISI 4340 steel (DeSisto, Carr, and Larson), 768.

irradiation embrittlement and hardening in pressurized components (Cibois, Lemaire, and Weisz), *STP 341*.

low-cycle axial fatigue behavior of mild steel (Yao and Munse), *STP 338*.

low-cycle fatigue characteristics of ultrahigh-strength steels (Carman, Armiento, and Markus), *STP 338*.

low-cycle fatigue properties of complex welded joints of stainless steel sheet materials at cryogenic temperatures (Christian, Hurlich, and Watson), *STP 338*.

mechanical properties of cold-drawn martensitic SAE 4340 steel rod (DiCesare), 517.

metallurgical effect of explosive straining (Henriksen, Lieberman, Wilkin, and McPherson), *STP 336*.

metallurgy of low-alloy, high-yield-strength steels (Austin, Gillett Memorial Lecture), *issued as a separate publication*.

neutron irradiation effects in A-286, Hastelloy X, and René 41 alloys (Robertshaw, Moteff, Kingsbury and Pugacz), *STP 341*.

neutron irradiation in alpha iron and 1Cr-0.5Mo pressure vessel steel (Eyre), *STP 341*.

nondestructive testing of high-strength steel rocket motor cases (Hendron), *STP 350*.

quality control procedure for rocket motor cases: reinforced plastic versus steel (Duvall), *STP 327*.

radiation effects in reactor structural materials (Reynolds), *STP 341*.

radiation-induced property changes in AISI type 347 stainless steel (Shober and Murr), *STP 341*.

Report of Committee A-1, 110.

Report of Committee A-5, 129.

Report of Committee A-10, 146.

Report of Committee B-1, 153.

significance of discontinuities on basis of destructive testing (Briggs), *MR&S*, June, 472.

significance of neutron spectrum on radiation effects studies (Rossin), *STP 341*.

simulated service test for solid-propellant missile motor cases (discussion), *MR&S*, June, 485.

statistical evaluation of fatigue test specimens including a factor of safety approach (Albrecht), *STP 338*.

subsize charpy impact specimens (Fahey and Kula), 1147.

Swedish studies on irradiation effects in structural materials (Grounes and Myers), *STP 341*.

tensile and notch-tensile properties of high-strength steels (Klier, Muvdi, and Sachs), 546.

tuned Q analysis of quench and precipitation

hardening of 4330M and 17-7PH steels (Hendrickson), *STP 345*.

Steele, R. K., *see* Donachie, M. J., Jr., Steele, R. K., and Shephard, R. G.

Stein, B. A., *see* Johnson, P. C., Stein, B. A., and Davis, R. S.

Stephenson, E. T. (discussion), *STP 339*.

Stern, E. G. (discussion), *MR&S*, Nov., 914.

Steven, G., and Handyside, J. R.: C-notch impact test for steels at high hardnesses, 1122.

Stone. Report of Committee C-18, 306.

Stover, H. E., *see* Wakeman, C. M., Stover, H. E., and Galloway, Frank.

Strain gages

- strain gage measurements under transient heating conditions (Johnson), *STP 345*.
- waterproofing electrical resistance strain gages (Sarpkaya), *MR&S*, April, 279.

Streets, R. E., and Schwarz, C. F.: Performance of Mil-L-2105B gear oils in military equipment, *STP 334*.

Stress cracking

- polyethylene (Suzawa, Hojo, and Ikeda), *MR&S*, July, 550.
- type 304 stainless steel (Logan, McBee, and Romanoff), *MR&S*, Aug., 635.

Stress effect on radiation stability of ASTM A 302 grade B pressure-vessel steel (Reynolds), *MR&S*, Aug., 644.

Stress-rupture

- effect of neutron bombardment on properties of structural alloys (Hinkle), *STP 341*.
- neutron irradiation effects in A-286, Hastelloy X, and René 41 alloys (Robertshaw, Motteff, Kingsbury, and Pugacz), *STP 341*.
- mechanical properties of extruded chromium alloy (Cairns and Grant), 566.
- polyethylene (Lander and Carey), *STP 324*.

Stress-strain characteristics of metals under conditions of transient heating and loading (Willhelm and Kattus), 613.

Structural testing, apparatus for maintaining constant loads on elastically failing structure (Ward and Ely), *MR&S*, Sept., 730.

Stucker, J. B., Toulmin, H. A., and Herbenar, E. J.: A new look in chassis lubricants, *STP 334*.

Stulen, F. B. (discussion), *STP 338*.

Sturkey, L.: Practical considerations in interpretation of electron diffraction patterns, *STP 339*.

Subsidence

- areal fill settlements and building foundation behavior at the San Francisco Airport (Roberts and Darragh), *STP 322*.
- foundation problems related to ground surface subsidence in Mexico City (Zeevaert), *STP 322*.
- predicting surface subsidence from basic soil tests (Gibbs and Bara), *STP 322*.
- subsidence of California highways (Cedergren and Weber), *STP 322*.

Suzawa, Y., Hojo, H., and Ikeda, T.: Effect of stress on environmental stress-cracking of polyethylene, *MR&S*, July, 550.

Sulfur, corrosive, in insulating oils (Shomber), *MR&S*, April, 280.

Sulfur hexafluoride

- round-robin tests of test cells for dielectric strength of gases (Liao and Shomber), *STP 346*.
- use of sulfur hexafluoride as a gaseous dielectric (Brown), *STP 346*.

Sullivan, J. D. (discussion), *STP 340*.

Sunderman, D. N., *see* Ritzman, R. L., Lieberman, R., Kircher, J. F., and Sunderman, D. N.

Supersonic transport

- fuels and lubricants (Sheard), *MR&S*, Oct., 820.
- hot fuel for a hot aircraft (Johnson), *MR&S*, April, 300.

materials problem (Kostoch), *MR&S*, Oct., 806.

materials for wings and fuselage (Raring), *MR&S*, Oct., 810.

nonmetallic materials (Hightchew), *MR&S*, Oct., 815.

Surfaces

- adsorption of gases and vapors on solids (Brunauer and Copeland), *STP 340*.
- chemisorption and catalysis (Emmett), *STP 340*.
- corrosion in relation to metallic surfaces (Burns), *STP 340*.
- field ion microscopy of surface structures on an atomic scale (Muller), *STP 340*.
- field method for surface soundness and adhesion testing of concrete (Wittenwyler), 1037.
- lubrication (Godfrey), *STP 340*.
- stability of structure of crystal surfaces (Cabreria), *STP 340*.
- structure of solid surfaces (Adamson), *STP 340*.
- surface chemistry and surface physics (Michaels), *STP 340*.
- surface texture in relation to adhesive bonding (Mariam), *STP 340*.

Surgical implant. Report of Committee F-4, 514.

Surveillance tests on structural materials in nuclear reactors (Landerman), *STP 341*.

Sussman, S., Portnoy, I. L., and Jacobson, J.: Handling and analysis of routine water samples in volume, *STP 337*.

Svendsen, S. D., *see* Birkeland, O., and Svendsen, S. D.

Swayze, M. A. (discussion), 899, 926.

Symonds, M. F. (discussion), *STP 338*.

Synthic rubber. Report of Committee D-11, 381.

T

Talley, C. P., *see* Clark, W. J., Gunn, K. M., and Talley, C. P.

Tamblyn, J. W., *see* Newland, G. C., Schulken, R. M., Jr., and Tamblyn, J. W.

Tape, electrical. Report of Committee D-9, 373.

Taraldsen, A.: Impact testing in a different way, *MR&S*, July, 571.

Television x-ray image enlargement system for nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoten and McMaster), *STP 327*.

Telk, C. L., *see* Burns, J. W. and Telk, C. L.

INDEX

Temperature
 effect of oxidation on stability of thermocouples (Starr and Wang), 1185.
 report of ASTM-ASME Joint Committee on Effect of Temperature on the Properties of Metals, 243.
 Report of Committee E-20, 500.

Tension testing
 bonded concrete surfaces (Wakeman, Stover, and Galloway), *MR&S*, April, 299.
 correlation of flaws of stainless steel castings (discussion), *MR&S*, Jan., 24; April, 289.
 design of flat low-ductility test specimens (Shinopoulos), *MR&S*, April, 297.
 diametral-compression test (Rudnick, Hunter, and Holden), *MR&S*, April, 283.
 metals at strain rates up to 200 sec^{-1} (Smith), *MR&S*, Sept., 713.
 resistance heating facility for determination of tensile properties of aircraft and missile alloys (Kyros, Gibbs, and Theberge), 1160.
 steel (Nunes), *MR&S*, Sept., 719.
 tensile and notch-tensile properties of high-strength steels (Klier, Muvdi, and Sachs), 546.
 thermoplastics (Kelly and Dunn), *MR&S*, July, 545.

Testing apparatus. Report of Committee E-1, 447.

Testing laboratories, directory of, *STP 333*.

Textiles. Report of Committee D-13, 388.

Theberge, C. L., *see* Kyros, W., Gibbs, T. W., and Theberge, C. L.

Thermal conductivity of beryllia rod by axial temperature distribution (Burk), *MR&S*, Jan., 25.

Thermal expansion
 five titanium carbide cermets from 68 to 1800 F (Harrington and Rowe), 620.
 thirteen tungsten carbide cermets from 68 to 1800 F (Harrington and Rowe), 633.

Thermal fatigue, analysis of conventional experimental method (Carden), 735.

Thermal insulating materials. Report of Committee C-16, 301.

Thermal loading of streams (Hoak), *STP 337*.

Thermocouples, effect of oxidation on stability (Starr and Wang), 1185.

Thermostat metals
 bibliography and abstracts, *STP 288*.
 fundamentals (Sears), *MR&S*, Dec., 981.
 Report of Committee B-4, 174.

Thickness measurement of transparent coatings (Mansour), *MR&S*, Jan., 29.

Thierry, J.: Some technical aspects of the motor oils market in France and in Europe, *STP 334*.

Thin films. Report of Committee F-1, 506.

Thomas, E. R. (discussion), *STP 346*.

Throckmorton, P. E. (discussion), *STP 327*.

Tile masonry, testing high-bond clay masonry assemblages (Monk), *STP 320*.

Timber, response of timber joints with metal fasteners to lateral impact loads (Jordan), *MR&S*, May, 368; (discussion), Nov., 914.

Time-of-set studies and their possible relation to current time-of-set problems (Berger), 886.

Titanium and titanium alloys
 comparison of test specimens for notch sensitivity and fracture toughness of high-strength sheet materials (Hickey and Larson), 780.
 effects of impurity elements and cold rolling on the mechanical properties of titanium—5Al-2.5Sn alloy at room and cryogenic temperatures (Christian, Hurlich, Chafey, and Watson), 578.
 effect of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K (Watson, Christian, and Allen), *STP 345*.
 effects of variables on sharp notch properties of 5Al-2.5Sn titanium alloy sheet at liquid hydrogen temperature (Shannon and Brown), 809.
 influence of section size on mechanical properties and fracture toughness of 6Al-6V-2Sn titanium (DeSisto, Carr, and Larson), 768.
 low-cycle fatigue of Ti-6Al-4V at -423 F (Hilsen, Yen, and Whiteson), *STP 338*.
 metallurgical effect of explosive straining (Henriksen, Lieberman, Wilkin, and McPherson), *STP 336*.
 properties of welded high-strength titanium alloy sheet (Brothers, Martens, and Wood) 646.
 Report of Committee B-2, 163.

Titanium carbide cermets, thermal expansion from 68 to 1800 F (Harrington and Rowe), 620.

Titles of periodicals, coden for, *STP 329*.

Tobin, J. C., *see* Chockie, L. J., Holmes, J. J., and Tobin, J. C.

Tons, E., *see* Krokosky, E. M., Tons, E., and Andrews, R. D.

Toulmin, H. A., *see* Stucker, J. B., Toulmin, H. A., and Herbenar, E. J.

Tour, Sam: Comments on test for perspiration resistance, 328.

Towle, A.: Axle and transmission lubricants; the European viewpoint, *STP 334*.

Toxicity in operation of metal degreasing tanks (Morrill, Blankenhorn, and Woolrich), 1303.

Trace, C. K., White, J. M., and Rich, C. E.: Portable low-cost polyethylene ultraclean assembly areas, *STP 342*.

Transformer insulation. Report of Committee D-27, 437.

Transient heating
 strain gage measurements (Johnson), *STP 345*.
 stress-strain characteristics of metals (Willhelm and Kattus), 613.

Transistors
 doping of germanium transistor surfaces by fluid-base encapsulant systems (Borofsky and Partridge), *STP 342*.
 effects of moisture after stress on electrical characteristics of germanium transistors (Partridge and Borofsky), *STP 342*.

Transition temperature
 determination of ductile brittle transition

temperatures on wire or strip specimens (Wood and Westbrook), 759.

mechanical properties of a chromium-1 per cent columbium alloy (Cairns and Grant), 566.

significance of neutron spectrum on radiation effects studies (Rossin), *STP 341*.

Transmission fluid

- automatic transmission fluid (Watt and Duckworth), *STP 334*.
- CRC research techniques for automatic transmission fluids (Calish), *STP 334*.
- factory service automatic transmission fluid requirements (Sprague and Woodruff), *STP 334*.

Trantina, J. A.: Investigation of landslides by seismic and electrical resistivity methods, *STP 322*.

Traxler, R. N.: Correlation of composition with durability and rheology of asphalts, 1235.

Tremper, B. (discussion), 1036, 1077.

Triaxial test of soils with pore pressure measurement (Johnson and Yoder), 1207.

Trichlorotrifluoroethane for vapor degreasing (Ramsey), 1324.

Troxell, G. E.: Introduction, *STP 344*.

Truman, C. L., Bolt, C. C., and Green, W. R.: Granular material sampler, *MR&S*, May, 378.

Tsai, S. W. (discussion), *STP 327*.

Tubes, electron, experiments on water in (Frost), *STP 342*.

Tubing, electrical. Report of Committee D-9, 373.

Tuned Q analysis of quench and precipitation hardening of 4330M and 17-7PH steels (Hendrickson), *STP 345*.

Tungsten

- effect of composition and dispersed-phase particle-size distribution on static elastic moduli of tungsten-copper composite materials (Krock), 605.
- Report of Committee B-2, 163.

Tungsten carbide cermets, thermal expansion from 68 to 1800 F (Harrington and Rowe), 633.

Tunnel test

- flame-spread tests in a large tunnel furnace (Yuill), *STP 344*.
- surface flammability as determined by the FPL 8-ft tunnel method (Peters and Eickner), *STP 344*.

Tust, R. A. (discussion), *MR&S*, June, 488.

U

Ultrasonic cavitation of fluorinated solvents, effect of temperature on (Smallwood), *STP 342*.

Ultrasonic testing. Report of Committee E-7, 477.

Ultrasonic testing of solid propellant missile motors (Hund), *STP 350*.

Ultraviolet spectra, molecular formula list of compounds, names, and references, *STP 357*.

Underhill, P. E.: Gamma scintillation scanning for inspecting solid rocket motors, *STP 350*.

Uranium. Report of Committee B-2, 163.

V

Vacuum

- ascent environment of spacecraft thermal control surfaces (Schmidt, Haslim, and McKellar), *STP 345*.
- fatigue testing of aluminum in vacuum (Ham and Reichenbach), *STP 345*.
- lubrication of ball bearings for space applications (Clauss, Drake, and Young), *STP 345*.

Van Lint, V. A. J.: Structure of displacement cascades produced by neutron irradiation, *STP 341*.

Vann, M. J., see Alzofon, F. E., Florant, L. E., Ronald, R. K., Vann, M. J., and Fitzgerald, J. E.

Vapor barriers. Report of Committee E-6, 475

Vapor degreasing

- health hazard factors in operation of metal degreasing tanks (Morrill, Blankenhorn, and Woolrich), 1303.
- solvent vapor degreasing applied to missile containers, conduits, transports, and hardware (Kearney), 1316.
- with trichlorotrifluoroethane (Ramsey), 1324.

Varlas, M. (discussion), *STP 327*.

Varma, M. M. and Sheffert, P. C.: Using cellulose membrane for determining carbon-tetrachloride-insoluble portion of bitumens, *MR&S*, July, 560.

Varnish

- Report of Committee D-1, 318.
- Report of Committee D-9, 373.

Vellines, R. P. (discussion), *MR&S*, Aug., 643.

Vicat softening point, measurement of (Graves and Loveless), *MR&S*, Jan., 33.

Vick, G. K. (discussion), *STP 334*.

Viscosity

- application of asphalt viscosity to paving problems (Griffin, Izatt, and Lettier), *STP 328*.
- falling plunger viscometer for determining asphalt viscosity at low temperatures (Schmidt and Santucci), 1248.
- fundamental viscosity and how it is measured (Levy), *STP 328*.
- low shear, of polymer melts (McGlamery and Harban), *MR&S*, Dec., 1003.
- relation of absolute viscosity of asphalt binder to stability of asphalt mixtures (Welborn, Halstead, and Olsen), *STP 328*.
- relation of empirical tests to fundamental viscosity of asphalt cement (Griffith and Puzinauskas), *STP 328*.
- viscoelastic properties of paving asphalts (Gzemski), *STP 328*.

Visible spectra, molecular formula list of compounds, names, and references, *STP 357*.

Volume change as a measure of freezing-and-thawing resistance of concrete made with different aggregates (Wills, Lepper, Gaynor, and Walker), 946.

Volume correction factors, development of, 402.

W

Waddington, Guy: Confidence factor in data retrieval, *MR&S*, Sept., 739.

INDEX

Wagner, E. F. (discussion), *MR&S*, Nov., 918.
 Wagner, W. K.: Effect of sampling and job curing procedures on compressive strength of concrete, *MR&S*, Aug., 629.
 Wakeman, C. M. (discussion), 1075.
 Wakeman, C. M., Stover, H. E., and Galloway, Frank: Method for testing quality of adhesion between two bonded concrete surfaces, *MR&S*, April, 299.
 Walker, G. (discussion), *STP 345*.
 Walker, S., *see* Wills, M. H., Jr., Lepper, H. A., Jr., Gaynor, R. D., and Walker, S.
 Wang, T. P., *see* Starr, C. D., and Wang, T. P.
 Ward, G. C. and Ely, J. F.: Apparatus for maintaining constant loads on elastically failing structure, *MR&S*, Sept., 730.
 Warren, W. E. (discussion), *STP 336*.
 Water,
 absorption tests of epoxy casting resins (Lee), *MR&S*, Nov., 910.
 analytical methods and instrumentation for determining cyanogen compounds (Lancy and Zabban), *STP 337*.
 automatic boiler water silica analysis (Allen), *STP 337*.
 gas chromatographic analysis of aqueous solutions (Baker), *STP 337*.
 handling and analysis of routine water samples in volume (Sussman, Portnoy, and Jacobson), *STP 337*.
 manual on industrial water and industrial waste water, *STP 148-F*.
 nitrates in water (Goldman), *STP 337*.
 political puppet called purity (Kinney), *STP 337*; *MR&S*, Jan., 37.
 Report of Committee D-19, 412.
 thermal loading of streams (Hoak), *STP 337*.
 water introduced into electron tubes (Frost), *STP 342*.
 water—raw material for utilities steam generation (Muller), *STP 337*.
 Water vapor transmission of reinforcing steel, effect of salt in concrete on (Griffin and Henry), 1046.
 Waterproofing
 electrical resistance strain gages (Sarkaya), *MR&S*, April, 279.
 Report of Committee D-8, 371.
 Watson, J. F.: Introduction, *STP 345*; *see also* Christian, J. L., Hurlich, A., Chafey, J. E., and Watson, J. F.
 Watson, J. F., Christian, J. L., and Allen, J. W.: Effect of nuclear radiation on tensile properties of high-strength materials at 20 K and 294 K, *STP 345*.
 Watt, A. K., and Duckworth, R. J.: Automatic transmission fluid, *STP 334*.
 Wave propagation, submicrosecond technique for simultaneous observation of input and propagated impact stresses (Halpin, Jones, and Graham), *STP 336*.
 Way, G. (discussion), *STP 334*.
 Weathering,
 optimum mounting angle for outdoor weathering of plastics (Newland, Schulken, and Tamblyn), *MR&S*, June, 487.
 spark-gap testers for asphalt films (Jones), *MR&S*, April, 293.
 Webber, A. C.: ASTM—our heritage and our responsibility (president's address), *MR&S*, Aug., 669.
 Webber, A. J. (discussion), *STP 340*.
 Weber, L. D., *see* Hogg, C. H., and Weber, L. D.
 Weber, W. G., *see* Cedergren, H. R., and Weber, W. G.
 Wechsler, M. S.: Fundamental aspect of radiation effects on diffusion-controlled reaction in alloys, *STP 341*; (discussion), *STP 341*.
 Weeks, W. F., *see* Ballard, G. E. H. and Weeks, W. F.
 Weight change of membrane filter with humidity (Cahn), *MR&S*, May, 377.
 Weisz, M., *see* Cibois, E., Lemaire, J., and Weisz, M.
 Welborn, J. Y., Halstead, W. J., and Olsen, R. E.: Relation of absolute viscosity of asphalt binder to stability of asphalt mixtures, *STP 328*.
 Welded joints, low-cycle fatigue properties of high-strength 301, 304L, 310, and AM-355 stainless steel sheet materials at cryogenic temperatures (Christian, Hurlich, and Watson), *STP 338*.
 Welded sheet, titanium alloy (Brothers, Martens, and Wood), 646.
 Wenk, S. A., *see* Criscuolo, E. L. and Wenk, S. A.
 Wescott, M. E.: Specifications do not control processes, *MR&S*, March, 210.
 Westbrook, J. H., *see* Wood, D. L., and Westbrook, J. H.
 Wexler, A. S. and Brako, F. D.: Use of ultraviolet spectrophotometry in determining lignosulfonate additions in cement, *MR&S*, May, 364.
 Whaley, R. E.: Improvement in 7075-T651 aluminum alloy fatigue life by coining, 692.
 White, J. M., *see* Trace, C. K., White, J. M., and Rich, C. E.
 Whiteson, B. V. (discussion), *STP 338*; *see also* Hilsen, R. R., Yen, C. S., and Whiteson.
 Whitfield, W. J., Mashburn, J. C., and Neitzel, W. E.: A new principle for airborne contamination control in clean rooms and work stations, *STP 342*.
 Wiens, B. E.: Chemical durability evaluation of electronic glasses, *STP 342*.
 Wilkin, J. F., *see* Henriksen, E. K., Lieberman, I., Wilkin, J. F., and McPherson W. B.
 Wilhelm, A. C., and Kattus, J. R.: Stress-strain characteristics of metals under conditions of transient heating and loading, 613.
 Williams, I. V.: Introduction, *STP 336*.
 Williams, R. K. (discussion), *STP 334*.
 Williamsen, C. T., *see* Cotton, R. A., and Williamsen, C. T.
 Wills, M. H., Jr., Lepper, H. A., Jr., Gaynor, R. D., and Walker, S.: Volume change as a measure of freezing-and-thawing resistance of concrete made with different aggregates, 946.
 Wilson, H. I. (discussion), *MR&S*, Sept., 722.
 Wilson, J. A. (discussion), *STP 344*.

Wilson, H. S., *see* Zoldners, N. G., Malhotra, V. M., and Wilson, H. S.

Wilson, S. D.: Use of slope measuring devices to determine movements in earth masses, *STP 322*.

Winans, R. R., *see* Fried, N. and Winans, R. R. Winslow, J. D. and Gates, G. R.: Effect of soil rehydration on Atterberg limits, *MR&S*, March, 205.

Wire

Report of Committee F-1, 506.

research on wire-wound composite materials (McGarry and Marshall), *STP 327*.

Wittenwyler, C. V.: Field method for surface soundness and adhesion testing of concrete, 1037.

Wolff, R. P. and Dodd, R. A.: Fatigue properties of some age-hardened alloys, *MR&S*, Sept., 734.

Wolock, I. (discussion), *STP 327*.

Wood

Report of Committee D-7, 363.

response of timber joints with metal fasteners to lateral impact loads (Jordon), *MR&S*, May, 368; (discussion), Nov., 914.

Wood, D. L., and Westbrook, J. H.: Apparatus for direct determination of ductile brittle transition temperatures on wire or strip specimens, 759.

Wood, H. L., *see* Brothers, A. J., Martens, H. E., and Wood, H. L.

Woodruff, R. L., *see* Sprague, S. R. and Woodruff, R. L.

Wool. Report of Committee D-13, 388.

Woolrich, P. F., *see* Morrill, E. E., Jr., Blankenhorn, J. M., and Woolrich, P. F.

Work, C. E. (discussion); *MR&S*, April, 288; *see also* Brown, G. W. and Work, C. E.

Works, C. N., *see* Lindsay, E. W., and Works, C. N. (Discussion), *STP 346*.

Wright, S. B., *see* Harries, D. R., Barton, P. J., and Wright, S. B.

X

X-ray

emission spectroscopy in chemical analysis of cement, raw materials, and raw mix (Brown), 904.

projection microscopy of roofing materials (Newman and Greenfield), *MR&S*, Nov., 893.

television X-ray image enlargement system for nondestructive testing of fiber glass reinforced plastic missile case materials (Rhoen and McMaster), *STP 327*.

X-ray powder data

list of alloy phase designations of x-ray diffraction data file sections 1-12, *STP 355*.

Report of Joint Committee on Chemical Analysis by Powder Diffraction Methods, 504.

Y

Yao, J. T. P., and Munse, W. H.: Low-cycle axial fatigue behavior of mild steel, *STP 338*.

Yarn

single end glass yarn tension test (Pirzadeh and Kennedy), *STP 327*.

tension test for glass fiber strands, yarn, and rovings (OCF strand test) (Hood), *STP 327*.

Yen, C. S. (discussions), *STP 345; MR&S*, June, 485; Sept., 738; *see also* Hilsen, R. R., Yen, C. S., and Whiteson, R. V.

Yoder, E. J., *see* Johnson, R. W. and Yoder, E. J. Youden, W. J.: Ranking laboratories by round-robin tests, *MR&S*, Jan., 9.

Young, W. C., *see* Clauss, F. J., Drake, S. P., and Young, W. C.

Young's modulus, new methods to determine elastic constant (Durelli and Ferrer), *MR&S*, Dec., 988.

Yuill, C. H.: Flame-spread tests in a large tunnel furnace, *STP 344*.

Yurenka, S.: Test methods for filament-wound specimens, *STP 327*.

Z

Zabban, W., *see* Lancy, L. E. and Zabban, W. Zajac, T. (discussion), 705.

Zeevaert, L.: Foundation problems related to ground surface subsidence in Mexico City, *STP 322*.

Zender, G. (discussion), *STP 327*.

Zinc and zinc alloys

Report of Committee B-2, 163.

Report of Committee B-6, 184.

Zircaloy

effect of neutron bombardment on stress-rupture properties of structural alloys (Hinkle), *STP 341*.

effect of neutron irradiation (Cupp), *STP 341*. in-reactor creep measurements (Chockie, Holmes, and Tobin), *STP 341*.

irradiation embrittlement and hardening of steels and zircaloy-2 in pressurized components (Cibois, Lemaire, and Weisz), *STP 341*.

Zirconium and zirconium alloys

Report of Committee B-2, 163.

Swedish studies on irradiation effects in structural materials (Grounes and Myers), *STP 341*.

Zoldners, N. G. (discussion), 901.

Zoldners, N. G., Malhotra, V. M., and Wilson, H. S.: High-temperature behavior of aluminum cement concretes containing different aggregates, 966.

Zukas, E., *see* McQueen, R. G., Zukas, E., and Marsh, S.